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Review of the 1978-1979 British Columbia Herring Fishery and Spawn Abundance

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September 1980

REVIEW OF THE 1978-79 BRITISH COLUMBIA HERRING FISHERY AND SPAWN ABUNDANCE

by

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ABSTRACT

Chalmers, D.D. and Sprout, P.E. 1980. Review of the 1978-79 British Columbia herring fishing and spawn abundance. Can. Ind. Rep. Fish. Aquat. Sci. No. 120, iii, 51 p.

During the 1978-79 season, herring were fished in British Columbia waters from November 5 to December 22, 1978 for food and bait and from February 12 to April 1, 1979 for roe. The total food and bait catch was 15,522 tons, with a landed value of $3.6 million. The 1979 roe herring fishery yielded 40,581 tons, for a landed value of $120.86 million. Spawn deposition totalled 30.2 million standard square yards; well above the 1971-78 average of 13.7 million.

Key words: Pacific herring, fishery, catch, spawn.

RESUME

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Au cours de la saison de 1978-79, le hareng a été pêché dans les eaux de la Colombie-Britannique du 5 novembre au 22 décembre 1978 à des fins de consommation et comme appât, et du 12 février au ler avril 1979 pour ses oeufs. Le total des prises destinées à servir d'appâts et à la consommation était de 15522 tonnes, d'une valeur au débarquement de 3,6 millions de dollars. La pêche du hareng plein en 1979 a rapporté 40 581 tonnes d'une valeur au débarquement de 120,86 millions de dollars. La superficie de dépôt des oeufs a atteint 30,2 millions de verges carrés normal isées, ce qui dépasse de beaucoup la moyenne de 13.7 millions pour 1971 à 1978.

Mots clés: hareng du Pacifique, pêche, prises, oeufs

INTRODUCTION

Prior to each fishing season, fishery managers propose catch limits for individual British Columbia herring roe fisheries (Table 3). These catch limits are derived from forecasts made by the Pacific Biological Station, and are determined from the amount of herring that spawned during the previous year, recruitment of young fish into the spawning population, and natural mortality of each year class making up the population. The number of desired spawners is then subtracted from the total projected population and the remainder is the surplus available to the component herring fisheries. These proposals are then reviewed by representatives from various segments of the fishing industry before establishment of final management guidelines. Prior to commencement of any fishery, test fishing and hydro-acoustic bio-mass estimates are carried out by Patrol and Charter vessels. Catch limits may be adjusted on the basis of the pre-fishery data. Once it has been ascertained that it is safe to proceed with the proposed fishing pattern, it is necessary to determine when the herring roe will be mature enough to meet market demands. Ideally the highest percent of roe to body weight is most desirable. However, fishery managers generally open a fishery when the roe maturity reaches 10%. Once the fishery has been opened, it is the Fishery Officer's major concern to ensure that stocks are not overexploited and that there is an adequate escapement to the spawning grounds.

This bulletin outlines the 1979 pre-fishery catch expectations, hailed catch estimates obtained from fishermen leaving the grounds, landed catch tonnages and opening dates and times for each fishery.

Also summarized are the 1978 food and bait fishery, the 1979 Spawn-on-Kelp fishery and all herring spawn depositions recorded in 1979. In addition the herring-roe landings for 1977-1979, and spawn depositions by statistical area for the years 1971-1979 are tabled.

SURVEY METHODS

The data for the fishery portion of this Information Bulletin is obtained from Fishery Officers' daily radio telephone reports to Field Operations Headquarters in Vancouver. These reports contain prefishery test data (tonnage estimates, size of fish, and roe maturities), fishing gear counts, opening and closure times, catch figures and weather reports. The official landed catch figures are compiled from fishing company sales slips obtained by the Economic and Special Industrial Services Directorate. Since sales slip catches are reported primarily by statistical area and not by actual fishing location or Management Unit (geographically "close" fishing and spawning locations), both "hailed" and "landed" catch data are used in the text.

In 1979, all spawn data was obtained from annual field reports submitted by District Officers to Vancouver Headquarters and was computer processed there.

Each year refinements are made in the technique of measuring spawn depositions. Field Officers record the length, width, and intensity of each spawning along with the type of vegetation and percentage of spawn area that is devoid of spawn.

Since most spawnings occur in the lower intertidal and upper subtidal zone, the deeper extent of depositions has to be ascertained by dragging a hook apparatus that catches pieces of vegetation such as algae, rockweed, and eelgrass, thus enabling the officers to determine the extent of spawning in deeper waters. A more accurate method of determining extent of spawning is by the use of S.C.U.B.A. gear or by swimming the area using a mask and snorkel.

The observations on spawnings are plotted on large scale charts and estimates of the extent of deposition are determined. Additionally, the Fishery Officers are supplied with detailed vegetation maps showing the various types of vegetation occurring in particular spawning locations to aid them in the location of spawnings.

Spawnings are converted to a standard measurement (Standard Square Yards at Medium Intensity) so that all locations can be directly compared to one another and meaningful comparisons can be made between years.

The method used to calculate Square Yards at Standard Intensity of Medium is: Multiply the length of deposition x the width x the weighting factor (Table 4)x the percent of the area that actually has spawn deposited on it. This last factor takes into consideration the patchyness of spawn depositions, i.e. a deposition of 600 yards x 15 yards at medium Intensity with 60% of the area containing spawn would be 600 x 15 x 1.4 x .6 = 7560 st. sq. yds. at Standard Intensity of Medium. Since the numbers generated are sufficiently large to be awkward, a base unit of 1000 square yards is used. Therefore, the 7.560 would become 7.56M. std. square yards.

B.C. HERRING FOOD AND BAIT FISHERY, 1978-79

The 1978-79 food and bait fishery lasted from November 5 to December 22, 1978. Openings planned for January, 1979 were cancelled due to apparent stock shortages. The majority of fish were caught during the period December 10-15, 1978, reflecting increased fishing effort due to the return to fishing of the United Fishermen and Allied Workers Union. The total catch of 15,522 tons (Table 1) is in the higher range of catches for recent years (5,700; 6,500; and 20,000 tons landed in 1975-76; 1976-77; and 1977-78 respectively), but was below the total allowable catch of 21,000 tons for the current year. This under-harvest has been attributed to several factors: problems with fish quality; reduced market for some herring products; and early closures of some sub-districts for conservation purposes. The landed herring value in 1978-79 of $3.6 million was slightly higher compared to the 1977-78 fishery when 21,957 tons were caught for a landed value of $3.3 million.

Catch Division by Gear and Landed Value

The fishery fleet consisted of 130 seines, 35 trawls and a small number of gillnets. The percent catch by gear type varied with subdistrict (Fig. 1) but, overall, seines and trawls accounted respectively for 78% and 22% of the total catch; gillnet catch was minimal.

Union fishermen settled on a basic rate of $108 per landed ton. As in the past, however, larger herring were preferred by the processors, and $120 per ton was offered if 60% or more of the fish in the catch were 20 cm or longer.

Herring Products

Thirty-three processing plants and 12 cold storage plants were involved in the 1978-79 food and bait herring fishery. The majority of herring (67%) were processed in the lower mainland with 19% and 14% respectively processed in Prince Rupert and on Vancouver Island.

Herring were processed in a variety of ways, but the majority were frozen whole with smaller amounts filleted, salted, marinated and smoked (Fig. 2). Whole frozen herring were exported to Europe and Japan for food, while exports to the United States were used for bait, primarily in the Alaska crab fishery.

Fishery by Herring Sub-District

Herring catches by sub-district in the 1978-79 fishery followed a trend observed in recent years (Table II). The majority of the catch was taken in the Lower East Coast with the remainder divided between the Middle East Coast and the North Coast. A small amount was taken in the Queen Charlottes. No fishery occurred in the West Coast and Central Coast Sub-Districts.

1) Lower East Coast Sub-District (Areas 17, 18 and 19)

This area was by far the most productive and landings amounted to approximately 75% (11,719 tons) of the total catch (Table 1). Fishing was concentrated in Trincomali, Satellite and Swanson Channels, and Plumper Sound. Peak fishing occurred during the period December 10-15, 1978 when 35 draggers and 115 seiners were operating. Seiners caught the majority of the catch (78%) while the remainder (22%) were taken by trawlers. The area closed on December 22, 1978.

2) Middle East Coast Sub-District (Areas 13, 14, 15 and 16)

Area 13, the only area in this Sub-District to open accounted for approximately 12% (1,831 tons) of the total catch (Table 1). The catch was divided into 95% and 5% in favur of seiners over trawlers. The majority of fish were caught in the Discovery Pass area (i.e. Deepwater and Granite Bays) and Okisolla Channel. Small fish (i.e. less than 20 cm in length), although not prevalent in trawl catches, were numerous in seine catches. The area closed on December 15, 1978 and proposed openings for Area 14 were cancelled due to apparent shortages in stocks.

3) Northern Sub-District (Areas 3, 4 and 5)

Approximately 12% (1,827) of the total catch was caught in Area 5, the only area in this Sub-District to open (Table 1). A substantial portion of this catch (40%) was taken by trawling with seining accounting for 60%. Browning Entrance received the major concentration of fishing effort. The Sub-District closed on December 15, 1978.

4) Queen Charlotte Island Sub-District (Areas 1, 2E and 2W)

This Sub-District accounted for approximately 1% (145 tons) of the total catch (Table 1), all taken by seining. Area 2W was not opened. The remaining areas were closed on December 15, 1978 and a proposed January opening in Area 1 was cancelled due to the possibility of harvesting early spawners.

General

Better quality herring was landed in the 1978-79 food and bait fishery compared to 1977-78. However, some major problems still exist. These are due to several factors: accelerated fish pumping, overloaded holds, spilling of fish, and inadequate vessel refrigeration systems. This situation was further aggravated when the major portion of the catch was landed in a short time period, resulting in overloading at the processing plants and delays in unloading and processing.

TABLE 1. Herring Food and Bait Landings (Tons) by Gear Type and Statistical Area, 1978-79.

Sub-District	Area	Seine	Trawl	Total
Queen Charlotte Is.	1/2W	145	-	145
Northern	5	1,100	727	1,877
Middle East Coast	13	1,742	89	1,831
Lower East Coast	17/18	9,163	2,556	11,719
		12,150	3,372	15,522

*actual catches may vary slightly since some preliminary data is included.

TABLE II. Percent of Total Annual Catch by Sub-District, Herring Food and Bait Fishery, 1976-79 (Figures approximate).

Sub-District	Statistical Area	1976-77	1977-78	1978-79
Lower East Coast	17-19	73	50	75
Middle East Coast	13-16	9	19	12
Upper East Coast	11-12	1	1	-
Lower West Coast	21-24	1	9	-
Upper West Coast	25-27	-	5	-
Upper Central	6	5	1	-
North Coast	3-5	12	17	12
Queen Charlotte Is.	1-2	1	1	1
Total Catch (Short Tons)		7,000	21,597	15,222

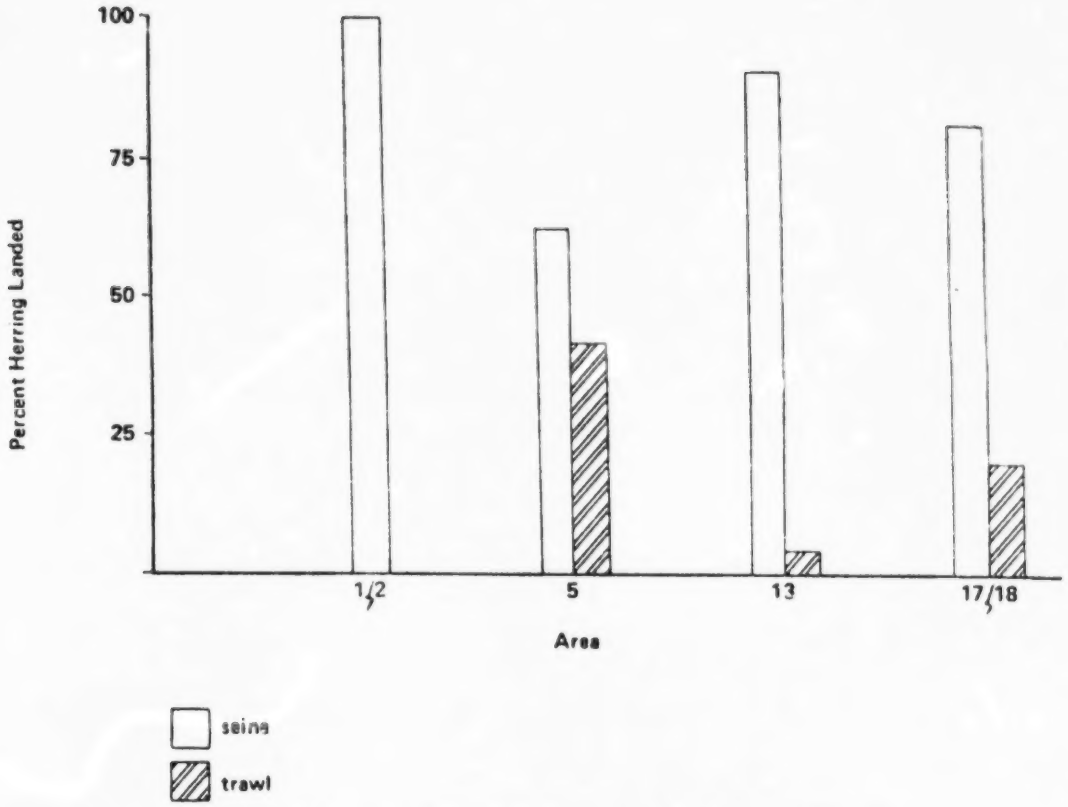

Figure 1. Percent of total herring landed in each area by gear type, food and bait fishery, 1978 - 1979.

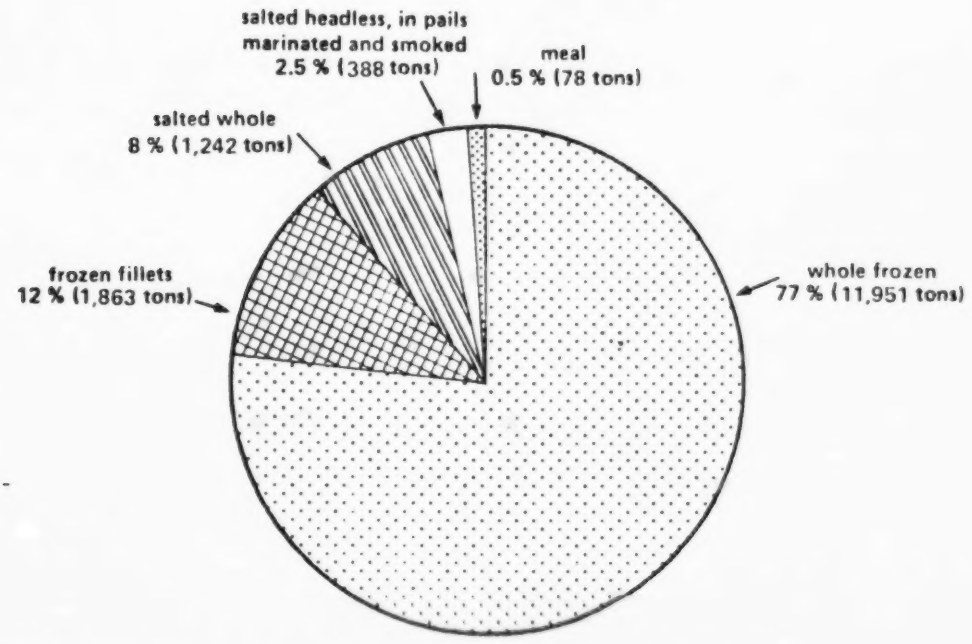

Figure 2. Percent of total herring processed by product type, food and bait fishery, 1978 - 1979.

HERRING SPAWN-ON-KELP FISHERY

Herring spawn-on-kelp has become an important fishery resource in British Columbia, supplying Japan with a traditional delicacy highly valued especially during New Year festivities.

This recent fishery has developed from a series of experiments conducted in 1972 by the Fisheries Service which examined the feasibility of harvesting spawn-on-kelp from within impoundments. The encouraging results of these early operations led in 1975 to an amendment in the B.C. Fishery Regulations to allow for the commercial propagation, harvest and sale of herring spawn-on-kelp. Permits for spawn-on-kelp were issued, on application, to individuals with experience in catching, handling and live-holding of herring; special consideration was given to Indian applicants. Spawn-on-kelp permit holders are not permitted to hold a herring roe licence.

The procedures are similar for each spawn-on-kelp operation: sexually mature herring are seined and released in floating net pens in which hand-picked kelp has been suspended; adults deposit and fertilize the eggs and this spawn remains in the water for three to four days before removal for packing in salt or fresh delivery to nearby processing plants.

1979 Spawn-on-Kelp Fishery

In 1979, 29 permits (16 to native Indians) were issued. Each permit was restricted to 8 tons of product (requiring approximately 60-100 tons of herring) and the total production was 215 tons. This is a substantial increase from the 16 tons of spawn-on-kelp produced in 1975, but is still below the total allowable production of 224 tons. Average price per pound for the permit holder has increased from 3 to 10 dollars during 1975 to 1979.

There have been suggestions to increase the number of spawn-on-kelp licence holders in 1980. However, herring stocks are forecast to return at the same level in 1980 as in 1979. Therefore, no new spawn-on-kelp licences will be issued in 1980 in order to avoid reduced quotas to fishermen participating in herring fisheries (herring used in spawn-on-kelp operations are deducted from the total herring tonnage expected to be available as catch).

THE 1979 HERRING ROE FISHERY

In the early part of February, an Information Bulletin proposing guidelines for the 1979 Roe Herring Fishery was distributed to all segments of the fishing industry. These guidelines outlined the entry and licencing requirements, proposed fishing patterns, catch predictions by sub-district, and the enforcement stance to be taken by the Department. The catch predictions were determined from forecasts of adult returns expected for the season published by the Pacific Biological Station.

TABLE 3.

The predicted catches for the 1979 roe herring fishery are distributed by Statistical Area and gear type as follows:

STATISTICAL AREA	SEINE (TONS)	GILLNET(setnet) (TONS)	TOTAL (TONS)
1	-	200	200
2E	5500	1400	6900*
2W	2000	500	2500
QCI SUB-TOTAL	7500	2100	9600
3	-	-	-
4	-	-	-
5	1200	800	2000
NORTH COAST SUB-TOTAL	1200	800	2000
6	600	900	1500
7	3000	4500	7500
8	-	-	-
9	-	-	-
10	-	-	-
CENTRAL COAST SUB-TOTAL	3600	5400	9000
11	-	-	-
12	-	-	-
13	-	-	-
JOHNSTONE STRAIT SUB-TOTAL	-	-	-
14 & 17 (combined)	10800	7200	18000
15	-	-	-
16	-	-	-
18	-	-	-
GULF SUB-TOTAL	10800	7200	18000
23	4300	1000	5300
24	5000	2000	7000
25	2000	3400	5400
26	-	-	-
27	1000	2000	3000
WCVI SUB-TOTAL	12300	8400	20700
TOTAL COAST	35400	23900	59300
CATCH DIVISION (%)	60	40	

* plus 1000 tons to supply spawn-on-kelp operations.

N.B. These figures are target catches only and may or may not be achieved. The 60% SN:40% GN catch division at this time remains unchanged from 1978.

Industry was also informed of the Department's concern over the decline of stocks in areas of intensive roe herring fishing, and that each fishery would be managed to achieve the best percentage of roe recovery compatible with sound conservation principles. It was also stated that the proposed catch limits were targets only and may or may not be achieved.

After consultation with industry and examination of the results of an independent economic study of catch division commissioned by the Department, the catch division for the 1979 season was changed to 55% seine, 45% gillnet. Due to the lack of a seine fishery in the Strait of Georgia and the Central Area, the catch division ended up 50% seine and 50% gillnet.

Fishermen landed 40,581.41 tons of roe herring for a landed value to fishermen of $120.86 million. This value was based on an average price paid to gillnets of $3100 per ton and an average price paid to seines of $2858 per ton. This compares to landings of 70,000 tons worth $56 million in 1978; 80,872 tons worth $29 million in 1977; and 86,835 tons worth $22 million in 1976.

The 1979 Herring Roe fishery started on February 12, 1979 with the opening of Naden Harbour (Area 1) and ended on April 1 with the closure of Kitkatla Inlet (Area 5).

The following is a resume of the fishery by herring sub-district.

QUEEN CHARLOTTE ISLAND (Areas 1 and 2)

Area 1

The fishery in Naden Harbour opened at 1430 hours on February 12 with 26 skiffs participating. At 1800 hours on February 14th the area closed because of low roe maturity. A total of 70 tons were taken in this opening.

A second opening for gillnets occurred at 2230 hours on February 25 and another 41 tons were taken before the area closed for the balance of the season at 1830 hours on February 27. The catch fell short of the 200 tons catch expectation. There was no seine fishery in this area.

Area 2W

There were three short openings in this sub-district.

Due to the large fleet size (43 seines) and small predicted run (500 tons), the Fishery Officer announced that there would be no opening unless some system could be devised by the fishermen, that would ensure over-fishing would not occur. It was proposed that only one boat at a time would set until the catch limit was achieved and the catch would be divided by the fishermen amongst the boats presently in the area.

Inskip Channel opened at 0920 on March 28. The first boat to set caught a total of 400 tons, and it was decided to let one more boat fish. Unfortunately this vessel caught 400 tons bringing the total catch to 800 tons, exceeding the

500 tons quota by 300 tons. The area was immediately closed at 1445 on March 28.

Seal Inlet opened next at 1045 on March 29 and closed 5 minutes later. A total of 100 tons was taken by 17 seines.

Rennell Sound opened at 1355 hours and closed at 1402 hours on March 29. A total of 60 tons were taken, bringing total hailed estimated tonnage caught in this sub-district to 960. This was well short of the 2,000 tons expected catch. The short-fall was mainly due to the failure of Louscoone Inlet to produce any harvestable stocks. There was no gillnet fishery in this sub-district.

Area 2E

The waters of Skincuttle Inlet opened for seines at 1125 hours on March 23 and closed at 1444 hours on the same day. During this short opening 173 seines hailed 7,532 tons. The pre-season catch expectation was 5,000 tons.

The gillnet fishery began at 1400 hours on March 23 and continued until 0800 hours on March 25. Fishing was initially very slow, with only 400 tons taken by the evening of March 24. That evening the fish moved to the spawning beaches and by 0800 hours on March 25, 2,460 tons had been taken. The pre-season catch expectation was 1,400 tons. There were approximately 325-340 skiffs operating during this fishery.

NORTH COAST (Areas 3, 4, and 5)

Area 3 and 4

No fishery.

Area 5

The last fishery of the season occurred in Kitkatla Inlet, where a hailed total of 2,763 tons were taken by seines and gillnets.

On March 26, 1979 a small spawning took place between Dries Inlet and Kitkatla Creek. However, soundings did not indicate enough fish in the area to warrant an opening. The area finally opened for gillnets at 1800 hours on March 28 with about 300 skiffs operating. It was originally anticipated that the expected catch level would be realized very quickly due to the high concentration of gear. However, fishing was very slow and the area closed for re-assessment at 1300 hours on March 29. Hailed figures indicated only one-half of the expected catch quota had been taken. The area was re-opened at 0730 hours on March 30 and closed for the balance of the season at 1200 hours on April 1. The total gillnet catch was 1,363 tons with roe maturity ranging between 9% and 14%.

The seine fishery opened at 1353 hours and closed at 1454 hours on March 29. During this short opening 55 seines hailed 1450 tons with a roe maturity between 9% and 10%.

CENTRAL COAST (Areas 6, 7, 8, 9, and 10)

Area 6

No Fisheries

Area 7

No Fisheries

Area 8

No Fisheries

Area 9

No Fisheries

Area 10

No Fisheries

UPPER EAST COAST (Areas 11, and 12)

Area 11

No Fisheries

Area 12

No Fisheries

MIDDLE EAST COAST (Areas 13, 14, 15 and 16)

Area 13

No Fisheries

Area 14

The Strait of Georgia was a disappointment to herring seine fishermen this year with no seine fishery taking place, although it was originally anticipated that up to 10,000 tons might be available to them. The gillnet fishery that occurred between Northwest Bay and Cape Lazo hailed 5,500 tons; far short of the 8,000 tons catch expectation. There was a high concentration of gear (300-450 skiffs) fishing in this area.

The Northwest Bay/Nuttal Bay area was the first to open at 1400 hours on March 7. At 1400 hours on the same day the boundary was extended to include up to the French Creek breakwater. Although fishing was slow, roe maturity remained high, averaging between 10% and 13%. At 1400 hours on March 8, the area between Hornby Island and Denman Island up to Cape Lazo opened. The entire area was closed for re-assessment at 1400 hours that same day. At 1400 hours on March 11 the vicinity of Denman Island opened. On March 12, roe test indicated a high percentage of spawned out fish and the area closed

at 1400 hours for the balance of the season.

LOWER EAST COAST (Area 17, 18 and 19)

Area 17

No Fisheries

Area 18

No Fisheries

Area 19

No Fisheries

LOWER WEST COAST (Areas 23, 24)

Area 23

In early February, soundings indicated a build-up of stocks in Imperial Eagle Channel with estimates of 10-15,000 tons in the area. These stocks steadily increased until March 6 when there were estimated to be as large as 30,000 tons. One test made on March 6 gave a roe yield of 10.5%. This test had a 2:1 female/male ratio, so further tests were conducted, which yielded even sex ratios and 5% and 6% roe yields. On March 8 stocks began building up in Macoah Pass and at 1000 hours were estimated to be around 3,000 to 3,500 tons. Roe tests indicated a maturity of 11-13%. Based on this maturity and the steadily increasing stocks, a seine opening was announced for some time after 1530 hours. At 1535 hours, the area opened to seines, with an outer boundary being set to prevent fishing on immature stocks in Imperial Eagle Channel. The boundary ran from Lyall Point, to Hankin Island, to Forbes Island, to the Vancouver Island shore. The area closed at 1700 hours March 8 with 125 seines hailing 7,000 tons of herring averaging 11.5% roe yield.

On Friday, March 9, stock assessment and gillnet tests indicated a continued buildup of fish. Area 23 opened for gillnets at 1605 hours on March 9th. At the opening there were 160 skiffs operating, however, this quickly increased as gear from Tofino and the Strait of Georgia moved in. During peak fishing 380 skiffs were operating. The area closed at 0900 hours on March 10 with 3,000 tons hailed by gillnets at an average roe yield of 12.5%.

Area 24

The original pre-season prediction for Area 24 was for a return of 20,000 to 21,000 tons of herring of which 4,500 tons were expected to be taken by seines and 2,500 tons by gillnets. However, by March 8 only 5,000 tons were in the area, and only a small gillnet fishery was proposed. Gillnet test samples taken in Hecate Bay indicated a maturity of 12-14%, and at 1415 on March 8 the lower portion of the area opened (those waters southerly of Chetarpe Point/Bartlett Point). At the opening there were approximately 120 skiffs in the area, but by early morning on March 9, this number had increased

to 240-250, with gillnet gear coming from Barkley Sound and the Strait of Georgia. The area closed at 1400 hours March 9 with 2,500 tons hailed. Roe maturity was very good, averaging 12-14%. There was no seine fishery.

UPPER WEST COAST (Areas 25, 26 and 27)

Area 25

On March 3, 1979 sounding carried out by the vessels Howay and the charter vessel Westview II estimated stocks of 12-14,000 tons in the Esperanza area. Testing by the charter vessel carried out on March 4 indicated a roe yield of 9.2% and based on this and gillnet test information, the area opened for gillnets at 1400 hours. At the opening there were approximately 100 skiffs in the area. The initial opening was for 48 hours, but fishing proved to be very slow and a 48-hour extension was given. Roe testing carried out during the fishery indicated maturities between 12 and 13% with some as high as 15%. At the end of the first extension, only 1500-2000 tons of the 3400 tons expected catch were taken, so an additional extension of 24 hours was given. On Friday, March 9 it was decided that fishing could continue through the weekend. At this time about 150 skiffs were operating. The area closed on March 12 at 1400 hours with a hailed catch of 4,050 tons.

On March 5 there were estimated to be between 12,000 and 15,000 tons of herring off Nootka Light. Tests carried out on this body of fish indicated a roe maturity of 11.5%. The fishery was opened for seines at 1600 hours on March 5. There were 120 seines in the area at the time of opening. The main body of fish were offshore between Nootka Light and Maquinna Point in exposed waters. Weather conditions were moderate with heavy rain and S.E. winds of 15-20 mph. The first sets were not made until 1800 hours. Early tests gave roe maturities of 12%. Fishing continued throughout the night despite worsening weather conditions and at 0800 hours on March 6 the area closed. The hailed catch forthis fishery was 4,000 tons.

On March 11 seine vessels scouting in the area reported a second build-up of stocks off Maquinna Point. Soundings made by the Howay confirmed this and it was estimated that there was 15-17,000 tons in the vicinity. At 0510 hours on March 13 the Nootka area was re-opened for seines. Early testing indicated a roe maturity of 10-11.5%. At the opening there were 50-60 seines operating. The area closed for stock assessment at 2000 hours, as fishing had declined rapidly after 1000 hours and neither the fishing fleet nor the Patrol Vessels were able to locate any large body of fish. The hailed catch from this opening was 2,000 tons with roe maturity between 10-13%.

It was noted from samples taken during both fisheries that fish from the first opening were considerably larger than those from the second opening. This would indicate that there were two separate stocks of fish off Nootka. As well as size, the timing of the first build-up and subsequent spawning was considerably earlier than normal for this area. This would also indicate a separate fish stock.

Area 26

No Fisheries

Area 27

The 1979 roe fishery in Area 27 took place in the Forward Inlet to Winter Harbour area, with gillnets being restricted to Winter Harbour and seines to Forward Inlet.

The gillnet fishery began at 1600 hours on March 7 and continued until 1400 hours on March 11th. At the time of opening there were estimated to be 3000 tons of herring in the area with roe tests indicating maturities between 10-12%.

During the first day of fishing there were 16 skiffs operating but by March 9 this number had increased to 30. A total of 431 tons were hailed with roe maturity averaging 14-16%. The seine fishery opened at 1300 hours on March 8 and closed at 2000 hours the same day. Four seines hailed a catch of 450 tons with a roe maturity averaging 12%. The total hailed catch of 881 tons was far short of the 3000 tons anticipated catch.

THE AMOUNT OF HERRING SPAWN DEPOSITED IN 1979

During 1979 a total of 30.2 million Standard square yards (st. sq. yds.)[1] of herring spawn was deposited on British Columbia beaches. This was the largest deposition since prior to the inception of the roe herring fishery and well above the 1971-78 average of 13.7 million st. sq. yds. (Table 8).

The Queen Charlotte Island sub-district (Areas 1, 2E, 2W) had one of the poorest spawnings since 1971 with a total of 482,000 st. sq. yds., compared to the 8-year average of 1.1 million st. sq. yds.

The Northern sub-district (Areas 3, 4, 5) had a very good spawning of 2.1 million st. sq. yds., nearly double the 8-year average of 1.1 million st. sq. yds.

The Middle East Coast sub-districts (Areas 13, 14, 15, 16) had by far the greatest amount of spawn deposited with a total of 19.9 million st. sq. yds. A more northerly shift in spawning pattern was noted in 1979, with the bulk of the spawn being deposited in the top end of Area 14.[2] A total of 15.4 million st. sq. yds. was deposited in this area, with an 8-year average of 2.6 million st. sq. yds.

The Lower West Coast sub-district (Areas 23, 24) had a slightly lower than average deposition of 2.3 million st. sq. yds. with an 8-year average of 2.7 million st. sq. yds. Barkley Sound was slightly below the 8-year average of 1.4 million st. sq. yds., with a total of 1.3 million st. sq. yds. being deposited. A shift in spawning patterns from the previous year was noted in this area as well, with the bulk of the spawn occurring in the Macoah Pass area, where previously it occurred in the Toquart - Mayne Bay area.

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1 The Middle East Coast spawn deposition figure has been found to be in error. Accordingly, the total should be revised to about 20 million st. sq. yds.

2 Original field reports have been re-examined and it is apparent that, due to a failure to take into account the sparcity of vegetation in the Area 14 spawning area and the absence of a diver survey, the 15.4 million figure is in error by a factor of 3. The actual figure is in the order of 5.0 million st. sq. yds.

The Upper West Coast sub-district (Areas 25, 26, 27) had an extremely good spawning compared to the 8-year average of 1.3 million st. sq. yds. The bulk of the spawn came from Area 25 (Nootka) where 3.0 million st. sq. yds. were deposited. The 8-year average for this area, is 893,300 st. sq. yds. Virtually all the spawning occurred on Bajo Reef similar to the past few years.

SUMMARY

1. Approximately 15,500 tons of herring were landed for food and bait during the 1978-79 season; down from 22,000 tons landed the previous year.

2. Landed value of the 1978-79 food and bait herring catch was $3.6 million; slightly higher than the landed value ($3.3 million) of the 1977-78 catch.

3. The majority of the food and bait catch was taken in the Lower East Coast Sub-District of the Strait of Georgia. Most of the remainder was taken in the Middle East Coast and North Coast Sub-Districts.

4. Total production of herring spawn-on-kelp in 1979 was 215 tons; a substantial increase over the 16 tons produced in 1975, but still below total allowable production of 224 tons.

5. In 1979, approximately 40,600 tons of roe herring were landed for a landed value of about $121 million.[1]

6. A total of 30.2 million standard square yards of herring spawn was deposited on British Columbia shores in 1979; the largest deposition since prior to the inception of the roe herring fishery, and well above the 1971-78 average of 13.7 million st. sq. yds.

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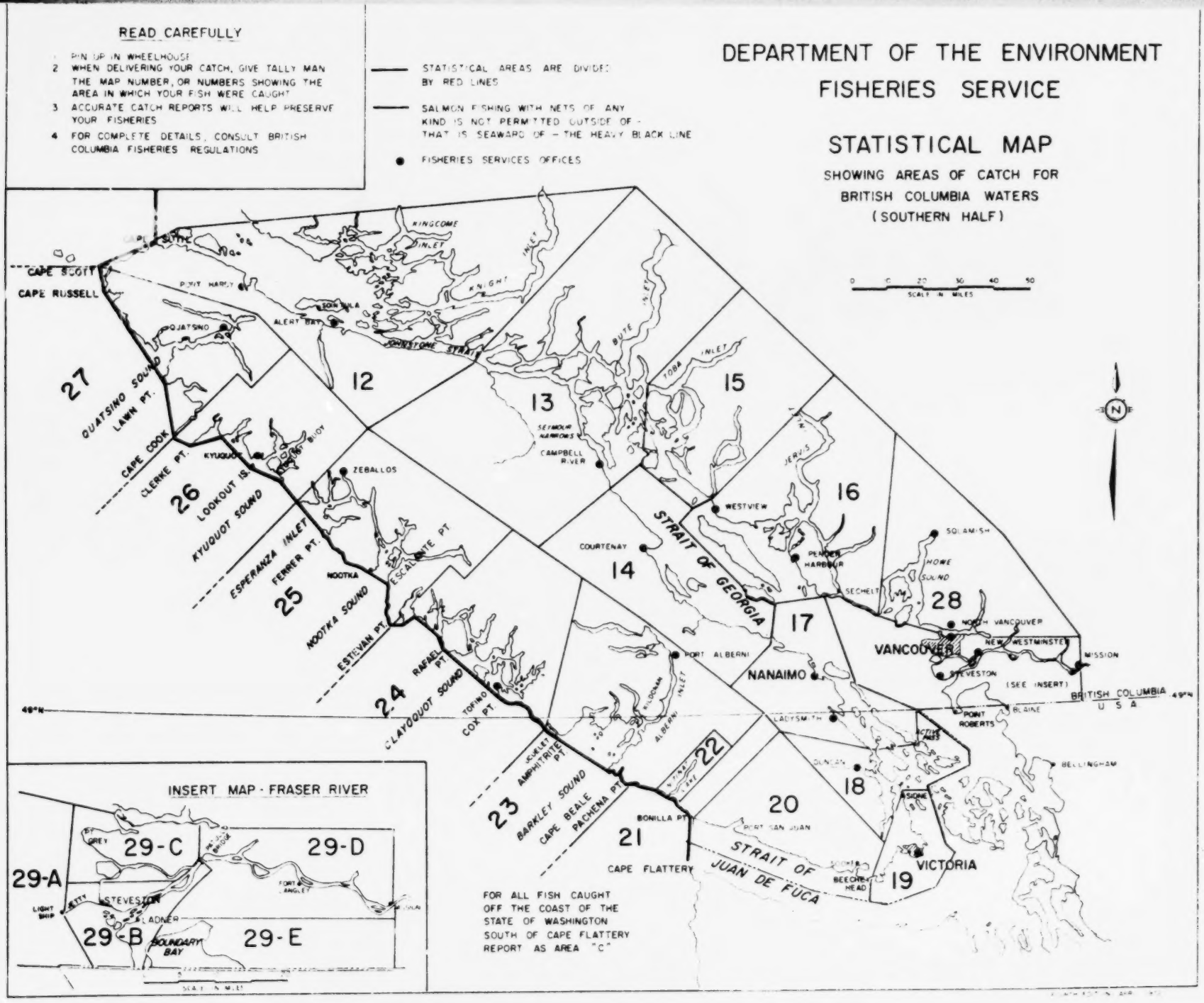
[1] See footnotes 1 and 2 on page 14.


READ CAREFULLY
1 PIN UP IN WHEELHOUSE
2 WHEN DELIVERING YOUR CATCH, GIVE TALLY MAN THE MAP NUMBER, OR NUMBERS SHOWING THE AREA IN WHICH YOUR FISH WERE CAUGHT
3 ACCURATE CATCH REPORTS WILL HELP PRESERVE YOUR FISHERIES
4 FOR COMPLETE DETAILS, CONSULT BRITISH COLUMBIA FISHERIES REGULATIONS
STATISTICAL AREAS ARE DIVIDED BY RED LINES
SALMON FISHING WITH NETS OF ANY KIND IS NOT PERMITTED OUTSIDE OF - THAT IS SEAWARD OF - THE HEAVY BLACK LINE
FISHERIES SERVICES OFFICES
DEPARTMENT OF THE ENVIRONMENT
FISHERIES SERVICE
STATISTICAL MAP
SHOWING AREAS OF CATCH FOR BRITISH COLUMBIA WATERS (SOUTHERN HALF)
SCALE IN MILES
CAPE SCOTT
CAPE RUSSELL
QUATSINO SOUND
LAWN PT.
CAPE COOK
CLERKE PT.
LOOKOUT IS.
KYUQUOT SOUND
ESPERANZA INLET
FERRER PT.
NOOTKA SOUND
ESTEVAN PT.
RAFAEL PT.
CLAYOQUOT SOUND
COX PT.
AMPHITRITE PT.
BARKLEY SOUND
CAPE BEALE
PACHENA PT.
CAPE FLATTERY
BONILLA PT.
STRAIT OF JUAN DE FUCA
STRAIT OF GEORGIA
KINGCOME INLET
KNIGHT INLET
BUTE INLET
TOBA INLET
JERVIS
SECHELT INLET
ALBERNI INLET
KILDONAN
PORT ALBERNI
NANAIMO
COURTENAY
CAMPBELL RIVER
WESTVIEW
PENDER HARBOUR
SQUAMISH
HOWE SOUND
VANCOUVER
NORTH VANCOUVER
NEW WESTMINSTER
MISSION
STEVESTON
(SEE INSERT)
BRITISH COLUMBIA
U S A
49°N
POINT ROBERTS
BLAINE
BELLINGHAM
LADYSMITH
DUNCAN
ACTIVE PASS
GALIANO
SATURNA
PENDER
MAYNE
SIDNEY
VICTORIA
BEECHEY HEAD
PORT SAN JUAN
ZEBALLOS
ESCALANTE PT
NOOTKA
KYUQUOT
TOFINO
ALERT BAY
POINT HARDY
QUATSINO
ZOMBRA
JOHNSTONE STRAIT
SEYMOUR NARROWS
ROSCOE BUOY
27
26
25
24
23
22
21
20
19
18
17
16
15
14
13
12
28
INSERT MAP - FRASER RIVER
29-A
29-B
29-C
29-D
29-E
BOUNDARY BAY
STEVESTON
LADNER
FORT LANGLEY
LIGHT SHIP
SCALE IN MILES
FOR ALL FISH CAUGHT OFF THE COAST OF THE STATE OF WASHINGTON SOUTH OF CAPE FLATTERY REPORT AS AREA "C"

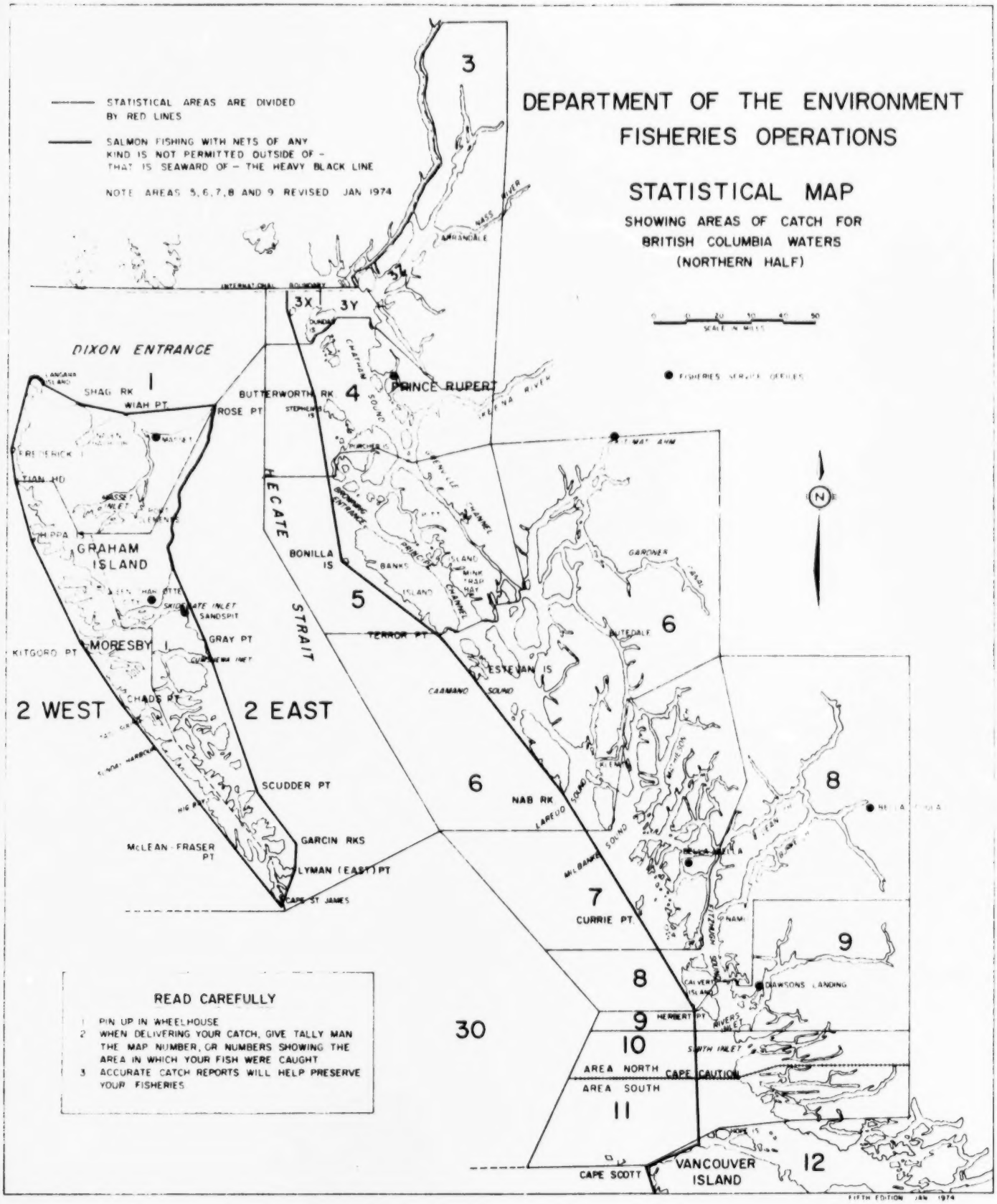

DEPARTMENT OF THE ENVIRONMENT
FISHERIES OPERATIONS
STATISTICAL MAP
SHOWING AREAS OF CATCH FOR
BRITISH COLUMBIA WATERS
(NORTHERN HALF)
STATISTICAL AREAS ARE DIVIDED BY RED LINES
SALMON FISHING WITH NETS OF ANY KIND IS NOT PERMITTED OUTSIDE OF - THAT IS SEAWARD OF - THE HEAVY BLACK LINE
NOTE AREAS 5,6,7,8 AND 9 REVISED JAN 1974
DIXON ENTRANCE
PRINCE RUPERT
HECATE STRAIT
GRAHAM ISLAND
MORESBY I.
2 WEST
2 EAST
BONILLA IS
TERROR PT
ESTEVAN IS
NAB RK
CURRIE PT.
SCUDDER PT
GARCIN RKS
LYMAN (EAST) PT
McLEAN-FRASER PT
CAPE ST JAMES
SHAG RK
WIAH PT
ROSE PT
BUTTERWORTH RK
KITGORO PT
GRAY PT
CHADS PT
SANDSPIT
DAWSONS LANDING
HERBERT PT
AREA NORTH
AREA SOUTH
CAPE CAUTION
CAPE SCOTT
VANCOUVER ISLAND
READ CAREFULLY
1 PIN UP IN WHEELHOUSE
2 WHEN DELIVERING YOUR CATCH, GIVE TALLY MAN THE MAP NUMBER, OR NUMBERS SHOWING THE AREA IN WHICH YOUR FISH WERE CAUGHT
3 ACCURATE CATCH REPORTS WILL HELP PRESERVE YOUR FISHERIES
FIFTH EDITION JAN 1974

Table 4. Herring spawn intensity categories and weighting factors used to calculate square yards at a standard intensity of medium

	NO. EGGS PER LINEAL INCH OF EELGRASS OR JAPWEED	NO. EGGS PER SQUARE INCH OF KELP, ROCK-WEED OR SEA LETTUCE	NO. EGGS / SQUARE YARD	WEIGHTING FACTOR
1. Very light	1-25	1-50	41,914	.05
2. Very light-light			152,683	.20
3. Light	25-100	50-200	352,242	.40
4. Light-medium			556,187	.65
5. Medium	100-250	200-500	843,259	.00
6. Medium-heavy			1,184,776	1.40
7. Heavy	250-500	500-1000	1,579,407	1.90
8. Heavy-very heavy			2,026,052	2.40
9. Very heavy	500 up	1000 up	2,523,780	3.00

TABLE 5. Herring Roe Lands by Statistical Area (1979) taken from sales slips as tabulated in the M.S. Annual Report. All figures in short tons.

Area	Gear		Total
	SN	GN	
1		107.63	107.63
2E	6,594.22	2,335.87	8,930.09
2W	233.18		233.18
5	1,380.96	774.26	2,155.22
14		7,527.15	7,527.15
23	6,271.78	2,455.04	8,726.82
24		2,240.34	2,240.34
25	5,456.42	4,418.96	9,875.38
27	472.75	302.85	775.6
Total	20,409.31	20,172.1	40,581.41

TABLE 6. Herring Roe Landings Hailed or Estimated Tonnages (short tons) as recorded by officers on the fishing grounds immediately after each fishery.

Area	Gear		Total
	SN	GN	
1		111	111
2E	7,532	2,460	9,992
2W	960		960
5	1,450	1,363	2,813
14		5,500	5,500
23	7,000	3,000	10,000
24		2,500	2,500
25	6,000	4,050	10,050
27	450	431	881
Total	23,392	19,415	42,807

NOTE: Hailed figures are rough estimates of catches obtained from Fishing Skippers on the fishing grounds.

Table 7 . Herring roe fishery landings (in short tons) from 1977-1979 by sub-district statistical area and gear type. (Sales Slips Data).

Sub-District	Area	TONS LANDED 1977 GN	1977 SN	1977 ALL	1978 GN	1978 SN	1978 ALL	1979 GN	1979 SN	1979 ALL
Queen Charlotte	1	--	--	---	131.8	--	131.8	107.63	--	107.63
	2	1,674	12,505	14,179	2,116.9	10,506.9	12,623.8	2,335.87	6,827.40	9,163.27
		1,674	12.505	14,179	2,248.7	10.506.9	12,755.6	2,443.50	6,827.40	9,270.90
Northern	3	298	3,562	3,860	1,227.7	1,054.4	2,282.1	--	--	---
	4	604	977	1,581	1,654.7	627.2	2,281.9	--	--	---
	5	732	1,155	1,887	1,305.3	825.1	2,130.4	774.26	1,280.96	2,155.22
		1,634	5,694	7,328	4,187.7	2,506.7	6,694.4	774.26	1,280.96	2,155.22
Upper Central	6	809	64	873	1,927.6	561.9	2,489.5	--	--	---
		809	64	873	1,927.6	561.9	2,489.5	--	--	---
Lower Central	7	6,807	4,230	11,037	8,276.2	4,931.2	13,207.4	--	--	---
	8	--	--	---	35.6	--	---	--	--	---
	9	42	--	42	--	--	---	--	--	---
	10	4	--	4	--	--	---	--	--	---
		6,853	4,230	11,083	8,311.8	4,931.2	13,243.2	--	--	---
Upper East Coast	11	--	--	---	--	--	---	--	--	---
	12	68	--	68	94.5	556.2	650.7	--	--	---
		68	--	68	94.5	556.2	650.7	--	--	---
Middle East Coast	13	--	--	---	--	--	---	--	--	---
	14	7,570	4,272	11,842	1,788.3	--	2,574.6	7,537.15	--	7,537.15
	15	--	--	---	--	--	5.9	--	--	---
	16	--	--	---	--	--	1.7	--	--	---
		7,570	4,272	11,842	1,788.3	--	2,582.2	7,537.15	--	7,527.15
Lower East Coast	17	120	--	120	5,253.3	3,878.6	8,338.0	--	--	---
	18	761	--	120	934.0	--	934.0	--	--	---
	19	--	--	---	--	--	---	--	--	---
	20	--	--	---	--	--	---	--	--	---
		881	--	881	6,187.3	3,878.6	9,272.0	--	--	---

Table 7 . Continued...

Sub-District	Area	TONS LANDED 1977 GN	1977 SN	1977 ALL	1978 GN	1978 SN	1978 ALL	1979 GN	1979 SN	1979 ALL
Lower West Coast	21	--	--	---	--	--	---	--	--	---
	22	--	--	---	--	--	---	--	--	---
	23	3,246	12,307	15,553	7,094.7	3,684.0	10,778.7	2,455.04	6,271.78	8,726.82
	24	7,522	7,480	15,002	5,655.3	1,576.1	7,231.4	2,240.34	--	2,240.34
		10,768	19,787	30,555	12,750.0	5,260.1	18,010.1	4,695.38	6,271.78	10,967.16
Upper West Coast	25	3,204	751	3,955	3,484.5	611.9	4,096.4	4,418.96	5,456.42	9.875.38
	26	108	--	108	33.6	--	33.6	--	--	---
	27	--	--	---	82.8	--	82.8	302.85	472.75	775.60
		3,312	751	4,063	3,600.9	611.9	4,212.8	4,721.81	5,929.17	10,650.9
GRAND TOTAL ALL DISTRICTS		33,569	47,303	80,872	41,096.5	28.813.5	69,910.3	20,172.1	20,409.31	40,581.41

Source: Environment Canada, Economics and Special Industry Services Branch (contains some preliminary data from company sales slips).

TABLE 8. The amount of herring spawn (square yards x 1000 at a standard intensity of medium) deposited in the coastal waters of British Columbia from 1971 to 1979 by herring sub-district and statistical area.

Area	Spawning Years									
	1971	1972	1973	1974	1975	1976	1977	1978	1979	8 Yr. Avg. (1971-1978)
Queen Charlotte Islands										
1	-	-	-	598.3	66.4	372.1	503.3	317.46	20.0	371.5
2E	1337.0	995.3	392.7	375.7	427.9	527.4	569.4	698.5	304.0	665.6
2W	137.0	220.6	272.4	332.4	390.6	319.3	148.0	103.2	158.3	240.4
	1474.0	1,215.9	665.1	1306.4	884.9	1218.8	1220.7	1119.16	482.3	1138.12
Northern										
3	367.0	100.2	167.8	116.0	4.6	47.4	55.5	5.4	845.9	107.9
4	143.9	625.9	1167.7	106.0	753.1	1354.4	328.3	80.2	350.0	569.9
5	215.3	154.6	225.2	517.1	578.5	524.9	672.0	277.5	867.8	395.6
	762.2	880.7	1560.7	739.1	1337.2	1926.7	1055.8	363.1	2063.7	1078.2
Upper Central										
6	64.5	111.1	492.3	116.1	252.8	148.9	118.8	143.2	50.0	181.0
	64.5	111.1	492.3	116.1	252.8	148.9	118.8	143.2	50.0	181.0
Lower Central										
7	145.8	100.0	560.6	332.8	492.2	572.0	843.8	431.6	413.6	434.9
8	274.2	251.2	337.0	204.1	298.7	369.7	256.0	108.4	72.5	262.4
9	75.4	43.5	344.8	85.2	207.7	81.2	94.4	59.7	23.0	124.0
10	155.3	18.2	34.5	21.3	20.8	19.5	7.2	45.4	15.6	40.3
	650.7	412.9	1276.9	643.4	1019.4	1042.4	1201.4	645.1	524.7	861.5
Upper East Coast										
11	18.5	5.9	1.8	1.0	4.6	7.3	3.7	2.4	11.6	5.7
12	391.4	636.8	1286.5	1092.1	1594.9	749.4	536.2	144.2	17.2	803.9
	409.2	642.7	1288.3	1093.1	1599.5	756.7	539.9	146.6	28.8	809.5

Table 8. Continued...

Area	Spawning Years 1971	1972	1973	1974	1975	1976	1977	1978	1979	8 Yr. Avg. (1971-1978)
Middle East Coast										
13	216.8	184.9	47.7	104.5	262.3	103.2	85.6	78.6	148.8	135.5
14	1081.3	82.0	56.7	368.5	1746.4	3621.1	4678.9	9292.0	15393.4	2615.9
15	206.0	270.4	466.9	229.6	419.8	1049.8	1485.7	1058.8	4354.9	648 4
16	235.7	122.1	122.3	10.2	88.6	15.4	15.5	0.2	22.8	76.3
	1739.8	659.4	693.6	712.8	2517.1	4789.5	6265.7	10429.6	19920.9	3476.0
Lower East Coast										
17	1326.3	257.2	257.2	2895.5	1749.4	2397.7	1054.7	2123.0	614.8	1507.6
18	295.3	250.5	226.5	422.6	948.0	49.8	71.1	166.2	74.5	303.8
19	-	0.2	-	0.4	-	-	-	-	-	0.08
20	-	-	-	-	-	-	-	-	-	0
	1621.6	507.9	1394.8	3318.5	2697.4	2447.5	1125.8	2289.2	689.3	1925.3
Lower West Coast										
22	0.2	-	-	-	-	-	-	-	-	0.03
23	825.5	707.2	404.8	908.9	779.8	2411.6	3246.6	570.9	995.6	1231.9
24	1103.8	1578.0	77.0	1662.4	2317.8	2188.1	1350.3	1373.0	1339.6	1456.3
	1929.5	2285.2	481.8	2571.3	3097.6	4599.7	4596.9	1943.9	2335.2	2688.2
Upper West Coast										
25	346.2	1349.1	1586.7	604.3	1373.9	366.2	755.5	764.5	3036.9	893.6
26	187.8	313.4	186.0	77.7	66.0	30.8	7.0	-	-	108.6
27	16.8	16.3	83.3	-	299.7	31.4	48.9	1832.1	1068.6	291.1
	550.8	1678.8	1856.0	682.0	1739.6	428.4	811.4	2596.6	4105.5	1293.0
Southern Mainland										
28	60.1	-	-	12.0	-	-	-	-	-	9.1
29	237.5	45.0	15.2	52.5	320.0	69.3	30.0	3.8	-	96.7
	297.6	45.0	15.2	64.5	320.0	69.3	30.0	3.8	0	105.7
ALL SUB-DISTRICTS	9464.5	8439.9	9724.8	11247.5	15464.5	17428.1	16966.5	20649.0	30200.4	13673.1

[1]See footnote 2 on page 14.

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	DATE SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTENSITY	EST. BARE AREA	STD.SQ. YDS (1000"S)

AREA: 1,NORTH COAST Q.C.I.

ALEXANDRA NARROWS	04/02	04/02	600	5	1	0.20	0.12
ALEXANDRA NARROWS	16/02	16/02	575	50	1	0.30	1.01
BAIN PT	04/02	04/02	2900	5	1	0.20	0.58
BAIN PT	29/03	29/03	990	20	3	0.60	3.17
GERMANIA CREEK	10/04	10/04	1350	30	1	0.60	0.81
GERMANIA CREEK	04/02	04/02	1000	5	1	0.20	0.20
GERMANIA CREEK	07/02	07/02	30	20	1	0.15	0.03
GERMANIA CREEK	22/02	22/02	900	30	1	0.50	0.68
GERMANIA CREEK	28/03	28/03	350	75	1	0.60	0.52
GERMANIA CREEK	29/03	29/03	675	20	3	0.60	2.16
INSKIP POINT	05/04	05/04	250	10	1	0.05	0.12
INSKIP POINT	05/04	05/04	150	4	3	0.15	0.20
INSKIP POINT	05/04	05/04	100	8	1	0.15	0.03
INSKIP POINT	04/04	04/04	200	20	3	0.25	1.20
OBSERVATORY PT	16/02	16/02	2475	50	1	0.30	4.33
OBSERVATORY PT	30/03	30/03	1140	40	1	0.40	1.37
STANLEY CREEK ESTUARY	22/02	22/02	1450	40	1	0.50	1.45
STANLEY CREEK ESTUARY	28/03	28/03	1350	75	1	0.60	2.02
AREA TOTAL			16485				20.00

AREA:2E,EAST COAST Q.C.I.

ALDER ISLAND	08/04	08/04	300	10	1	0.80	0.03
ALDER ISLAND	08/04	08/04	300	5	1	0.70	0.02
ALDER ISLAND	08/04	09/04	700	5	1	0.70	0.05
ALFORD POINT	28/04	28/04	150	10	1	0.00	0.08
ALFORD POINT	28/04	28/04	200	20	3	0.10	1.44
ALLIFORD BAY	13/05	14/05	400	25	4	0.00	6.50
ALLIFORD BAY	13/05	14/05	400	15	3	0.00	2.40
BARE ISLAND (TORRENS IS.)	06/05	07/05	1100	15	4	0.00	10.73
BARGE POINT	25/05	25/05	150	20	3	0.40	0.72
BARGE POINT	25/05	25/05	175	10	4	0.15	0.97
BARGE POINT	22/05	22/05	200	7	2	0.20	0.22
BARGE POINT	25/05	25/05	175	15	3	0.30	0.74
BARGE POINT	22/05	22/05	250	25	2	0.15	1.06

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE START	SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTEN-SITY	EST. BARE AREA	STD.SQ. YDS (1000"S)

AREA:2E,EAST COAST Q.C.I. CONTINUED

BARGE POINT	22/05	22/05	200	70	2	0.15	2.38
BEATTIE ANCHORAGE	21/05	21/05	150	30	5	0.20	3.60
BEATTIE ANCHORAGE	17/04	20/04	400	15	3	0.20	1.92
BEATTIE ANCHORAGE	20/04	27/04	800	15	6	0.10	15.12
BEATTIE ANCHORAGE	20/04	27/04	250	5	7	0.00	2.38
BEATTIE ANCHORAGE	0/04	0/04	50	10	5	0.20	0.40
BEATTIE ANCHORAGE	12/04	12/04	180	10	1	0.00	0.09
BEATTIE ANCHORAGE	22/05	22/05	550	15	1	0.05	0.39
BEATTIE ANCHORAGE	23/05	23/05	225	10	2	0.15	0.38
BEATTIE ANCHORAGE	23/05	23/05	150	5	2	0.70	0.05
BEATTIE ANCHORAGE	17/04	20/04	100	30	2	0.20	0.48
BEATTIE ANCHORAGE	17/04	20/04	70	10	5	0.10	0.63
BEATTIE ANCHORAGE	17/04	20/04	800	10	4	0.30	3.64
BEATTIE ANCHORAGE	17/04	20/04	300	6	6	0.50	1.26
BEATTIE ANCHORAGE	21/05	21/05	200	7	4	0.10	0.82
BEATTIE ANCHORAGE	21/05	21/05	800	10	3	0.10	2.88
BEATTIE ANCHORAGE	21/05	21/05	200	10	5	0.15	1.70
CONGLOMERATE POINT	17/04	17/04	20	10	5	0.10	0.18
CONGLOMERATE POINT	17/04	17/04	600	25	4	0.20	7.80
CONGLOMERATE POINT	17/04	17/04	100	75	1	0.40	0.23
CONGLOMERATE POINT	17/04	17/04	800	30	4	0.10	14.04
CONGLOMERATE POINT	17/04	17/04	50	10	3	0.20	0.16
CONGLOMERATE POINT	17/04	17/04	50	50	3	0.10	0.90
CONGLOMERATE POINT	17/04	17/04	1200	10	5	0.20	9.60
CONGLOMERATE POINT	17/04	17/04	600	5	3	0.20	0.96
DAVEY ISLETS	21/05	21/05	100	45	2	0.05	0.86
DAWSON COVE	29/04	29/04	200	10	8	0.05	4.56
DAWSON COVE	01/06	04/06	400	5	7	0.15	3.23
GILLATT ISLAND (GRASSY IS.)	12/05	12/05	200	75	1	0.00	0.75
HAIDA POINT	04/05	04/05	100	50	5	0.00	5.00
HAIDA POINT	04/05	04/05	700	15	5	0.00	10.50
HAIDA POINT	04/05	05/05	350	10	1	0.00	0.18
HARRIET ISLAND	13/04	13/04	610	10	2	0.10	1.10
HUSTON INLET	09/04	09/04	810	12	8	0.00	23.33
HUSTON INLET	10/04	10/04	920	11	4	0.00	6.58
HUSTON INLET	01/04	01/04	100	9	2	0.10	0.16
HUSTON INLET	06/04	07/04	1580	7	6	0.00	15.48
HUSTON INLET	10/04	10/04	500	14	4	0.00	4.55
HUSTON INLET	10/04	10/04	75	50	5	0.00	3.75
HUSTON INLET	13/04	13/04	990	13	2	0.00	2.57
JEDWAY	13/04	15/04	50	60	1	0.20	0.12
JEDWAY	11/04	11/04	630	6	2	0.00	0.76
JEDWAY	13/04	15/04	75	80	1	0.20	0.24
JEDWAY	07/04	09/04	1520	9	6	0.05	18.19

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	END	LENGTH YDS.	WIDTH YDS.	INTENSITY	EST. BARE AREA	STD.SQ. YDS (1000"S)

AREA:2E,EAST COAST Q.C.I. CONTINUED

JEDWAY	07/04	09/04	260	25	4	0.00	4.23
JEDWAY	13/04	15/04	3242	3	3	0.00	3.89
JEWELL ISLAND (TREE ISLAND)	06/05	07/05	1050	15	4	0.00	10.24
KANKIDAS POINT	10/04	10/04	950	7	4	0.10	3.89
KANKIDAS POINT	09/04	09/04	570	13	5	0.40	4.45
PACOFI BAY	28/04	28/04	75	5	1	0.00	0.02
PACOFI BAY	28/04	28/04	350	4	1	0.00	0.07
PACOFI BAY	28/04	28/04	50	10	1	0.00	0.03
PACOFI BAY	28/04	28/04	300	4	1	0.10	0.05
PACOFI BAY	28/04	28/04	850	5	2	0.00	0.85
PACOFI BAY	28/04	28/04	250	5	5	0.00	1.25
PACOFI BAY	28/04	28/04	100	15	3	0.30	0.42
PACOFI BAY	28/04	28/04	200	5	3	0.15	0.34
PACOFI BAY	28/04	28/04	250	5	1	0.20	0.05
PACOFI BAY	28/04	28/04	400	4	5	0.20	1.28
PACOFI BAY	28/04	28/04	100	6	3	0.10	0.22
PACOFI BAY	28/04	28/04	100	50	5	0.10	4.50
POURIVCO BAY	15/04	15/04	300	10	3	0.30	0.84
ROBBER IS	09/05	09/05	50	10	1	0.00	0.03
SAW REEF	08/04	08/04	300	5	1	0.95	0.00
SECTION COVE	06/04	09/04	220	20	4	0.20	2.29
SECTION COVE	09/04	09/04	400	2	1	0.50	0.02
SECTION COVE	06/04	09/04	550	7	4	0.00	2.50
SECTION COVE	08/04	08/04	130	10	4	0.70	0.26
SECTION COVE	06/04	09/04	420	10	5	0.00	4.20
SECTION COVE	06/04	09/04	110	10	5	0.10	0.99
SECTION COVE	06/04	09/04	70	30	7	0.00	3.99
SECTION COVE	06/04	09/04	60	40	5	0.10	2.16
SECTION IS	10/04	10/04	100	100	1	0.10	0.45
SECTION IS	06/04	09/04	500	10	6	0.05	6.65
SECTION IS	10/04	10/04	220	10	1	0.80	0.02
SECTION IS	09/04	09/04	300	10	4	0.70	0.59
SLIM INLET	03/04	10/04	1620	14	4	0.10	13.27
SLIM INLET	10/04	12/04	1920	15	4	0.05	17.78
SLIM INLET	08/04	09/04	1525	9	5	0.20	10.98
TAKELLEY COVE	29/04	29/04	1000	5	2	0.00	1.00
TRANSIT ISLAND	11/05	11/05	250	5	1	0.00	0.06
TRANSIT ISLAND	12/05	12/05	50	10	3	0.00	0.20
TRANSIT ISLAND	12/05	12/05	200	15	3	0.10	1.08

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	DATE SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTENSITY	EST. BARE AREA	STD.SQ. YDS (1000"S)
AREA:2E,EAST COAST Q.C.I.		CONTINUED					
AREA TOTAL			42647				304.00
AREA:2W,WEST COAST Q.C.I.		CONTINUED					
CLAPP BASIN	15/04	15/04	800	20	5	0.20	12.80
CLAPP BASIN	15/04	15/04	150	20	1	0.10	0.14
CLAPP BASIN	15/04	15/04	60	20	3	0.20	0.51
CLAPP BASIN	15/04	15/04	100	20	5	0.15	1.70
DOINIE ISLAND	17/04	17/04	400	3	1	0.00	0.06
DOINIE ISLAND	17/04	17/04	300	3	1	0.00	0.05
FLAMINGO INLET	04/04	04/04	100	20	5	0.10	1.80
FLAMINGO INLET	04/04	04/04	40	50	5	0.10	1.80
INSKIP CHANNEL	29/03	29/03	200	10	4	0.60	0.52
INSKIP CHANNEL	29/03	29/03	100	10	4	0.20	0.52
INSKIP CHANNEL	29/03	29/03	50	20	4	0.50	0.33
INSKIP CHANNEL	29/03	29/03	10	10	1	0.40	0.01
INSKIP CHANNEL	29/03	29/03	100	5	5	0.10	0.45
INSKIP CHANNEL	29/03	29/03	100	30	5	0.50	1.50
INSKIP CHANNEL	29/03	29/03	200	10	5	0.30	1.40
INSKIP CHANNEL	29/03	29/03	200	20	4	0.60	1.04
LOUSCOONE INLET	05/04	05/04	1800	15	5	0.10	24.30
LOUSCOONE INLET	06/04	06/04	20	20	1	0.60	0.01
LOUSCOONE INLET	06/04	06/04	50	20	1	0.40	0.03
LOUSCOONE INLET	06/04	06/04	20	20	1	0.80	0.00
LOUSCOONE INLET	06/04	06/04	600	20	5	0.20	9.60
LOUSCOONE INLET	04/04	04/04	600	40	6	0.05	31.92
LOUSCOONE INLET	29/03	29/03	100	15	3	0.20	0.48
NEWCOMBE INLET	12/04	12/04	1300	10	6	0.20	14.56
NEWCOMBE INLET	22/04	22/04	60	10	4	0.30	0.27
NEWCOMBE INLET	22/04	22/04	100	5	4	0.20	0.26
NEWCOMBE INLET	22/04	22/04	500	5	4	0.60	0.65
NEWCOMBE INLET	12/04	12/04	50	10	3	0.10	0.18
NEWCOMBE INLET	12/04	12/04	1000	10	5	0.20	8.00
NEWCOMBE INLET	12/04	12/04	100	20	3	0.30	0.56
NEWCOMBE INLET	12/04	12/04	500	20	5	0.10	9.00
NEWCOMBE INLET	12/04	12/04	300	45	5	0.00	13.50

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE START	SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTEN-SITY	EST. BARE AREA	STD.SQ. YDS (1000"S)

AREA:2W,WEST COAST Q.C.I. CONTINUED

NEWCOMBE INLET	22/04	22/04	300	5	6	0.10	1.89
NEWCOMBE INLET	22/04	22/04	75	5	6	0.10	0.48
PEEL INLET	29/03	29/03	30	5	1	0.00	0.01
PEEL INLET	29/03	29/03	30	10	5	0.10	0.27
PEEL INLET	29/03	29/03	80	10	2	0.80	0.03
PORT LOUIS	27/03	04/04	200	15	1	0.30	0.11
PORT LOUIS	04/04	04/04	20	20	1	0.00	0.02
PORT LOUIS	04/04	04/04	50	20	5	0.30	0.70
SEAL INLET	09/04	09/04	50	20	5	0.05	0.95
SEAL INLET	09/04	09/04	20	20	3	0.00	0.16
SEAL INLET	09/04	09/04	20	20	3	0.00	0.16
SHIELDS BAY	15/04	15/04	200	20	3	0.10	1.44
SHIELDS BAY	15/04	15/04	150	20	6	0.10	3.78
SHIELDS BAY	15/04	15/04	200	20	4	0.10	2.34
SHIELDS BAY	15/04	15/04	100	10	3	0.40	0.24
SHIELDS BAY	15/04	15/04	200	20	3	0.15	1.36
SHIELDS BAY	15/04	15/04	250	20	6	0.20	5.60
TASU SOUND	12/04	12/04	20	20	3	0.00	0.16
TASU SOUND	12/04	12/04	100	5	3	0.20	0.16
TASU SOUND	12/04	12/04	350	5	3	0.30	0.49
AREA TOTAL			12475				158.30

AREA: 3,NASS

BATH PT.	31/03	31/03	150	20	3	0.40	0.72
BATH PT.	31/03	31/03	40	10	3	0.00	0.16
BATH PT.	31/03	31/03	880	60	7	0.00	100.32
CUNNINGHAM PASS	31/03	31/03	2150	35	3	0.00	30.10
HANKIN REEF	15/05	15/05	250	30	7	0.00	14.25
HARBOUR REEFS	15/05	15/05	600	20	5	0.15	10.20
HARBOUR REEFS	15/05	15/05	1000	200	7	0.15	323.00
PORT SIMPSON	31/03	31/03	1000	30	3	0.00	12.00
REDCLIFF POINT	01/04	03/04	1500	45	5	0.00	67.50
REDCLIFF POINT	01/04	03/04	1200	100	4	0.00	78.00
STUMAUN BAY	31/03	31/03	35	30	3	0.50	0.21

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	END	LENGTH YDS.	WIDTH YDS.	INTEN-SITY	EST. BARE AREA	STD.SQ. YDS (1000"S)
AREA: 3,NASS		CONTINUED					
STUMAUN BAY	31/03	31/03	800	5	4	0.25	1.95
STUMAUN BAY	31/03	31/03	900	15	5	0.10	12.15
STUMAUN BAY	31/03	31/03	1300	4	4	0.20	2.70
STUMAUN BAY	31/03	31/03	50	40	3	0.75	0.20
STUMAUN BAY	31/03	31/03	3600	40	5	0.00	144.00
STUMAUN BAY	31/03	31/03	250	22	4	0.20	2.86
STUMAUN BAY	31/03	31/03	150	20	6	0.10	3.78
VILLAGE ISLAND	15/05	15/05	100	20	7	0.00	3.80
VILLAGE ISLAND	15/05	15/05	10	20	5	0.00	0.20
VILLAGE ISLAND	31/03	31/03	2100	45	3	0.00	37.80
AREA TOTAL			18065				845.90
AREA: 4,SKEENA							
BELLETI POINT	01/04	03/04	1600	200	4	0.00	208.00
MALACCA PASS	20/04	20/04	2100	30	3	0.00	25.20
PEARL HARBOUR	01/04	03/04	1300	100	4	0.00	84.50
PEARL HARBOUR	01/04	03/04	1600	50	3	0.00	32.00
TUGWELL ISLAND	07/05	07/05	400	15	1	0.00	0.30
AREA TOTAL			7000				350.00
AREA: 5,GRENVILLE-PRINCIPE							
BILLY BAY	20/04	30/04	100	75	5	0.10	6.75
BILLY BAY	20/04	30/04	200	30	6	0.10	7.56
BILLY BAY	20/04	30/04	200	50	6	0.10	12.60

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	DATE SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTEN-SITY	EST. BARE AREA	STD.SQ. YDS (1000"S)

AREA: 5,GRENVILLE-PRINCIPE CONTINUED

BILLY CREEK	20/04	30/04	350	15	4	0.20	2.73
CAMP CREEK	26/03	26/03	525	125	3	0.50	13.13
CAMP CREEK	26/03	26/03	1235	75	3	0.30	25.94
GASBOAT PASSAGE	21/04	21/04	500	100	4	0.10	29.25
GURD ISLAND	21/04	28/04	250	175	9	0.10	118.13
GURD ISLAND	21/04	28/04	75	75	9	0.10	15.19
GURD ISLAND	10/04	10/04	125	20	5	0.10	2.25
GURD ISLAND	10/04	16/04	150	50	4	0.10	4.39
GURD ISLAND	10/04	16/04	75	30	3	0.20	0.72
GURD ISLAND	10/04	16/04	200	30	6	0.10	7.56
GURD ISLAND	10/04	16/04	150	20	7	0.05	5.42
GURD ISLAND	10/04	10/04	75	75	5	0.05	5.35
GURD ISLAND	10/04	10/04	175	50	7	0.15	14.14
GURD ISLAND	10/04	10/04	100	50	6	0.05	6.65
GURD ISLAND	10/04	10/04	175	30	5	0.10	4.73
GURD ISLAND	21/04	28/04	175	125	9	0.10	59.07
GURD ISLAND	21/04	28/04	200	50	9	0.10	27.00
GURD ISLAND	07/04	07/04	475	200	7	0.05	171.48
GURD ISLAND	07/04	07/04	400	100	7	0.05	72.20
GURD ISLAND	07/04	07/04	200	100	7	0.10	34.20
GURD ISLAND	07/04	07/04	275	100	5	0.20	22.00
GURD ISLAND	07/04	07/04	300	75	5	0.15	19.13
GURD ISLAND	07/04	07/04	400	60	5	0.15	20.40
KITKATLA CREEK	26/03	26/03	100	100	4	0.05	6.18
KITKATLA CREEK	26/03	26/03	350	100	4	0.30	15.93
ROBERT ISLAND	18/04	18/04	150	100	6	0.05	19.95
ROBERT ISLAND	18/04	18/04	250	125	7	0.05	56.41
ROBERT ISLAND	18/04	18/04	250	125	7	0.05	56.41
SERPENTINE INLET	21/04	21/04	600	15	4	0.15	4.97
AREA TOTAL			8785				867.82

AREA: 6,BUTEDALE

HAWKESBURY ISLAND	24/05	30/05	5800	4	1	0.60	0.46
HAWKESBURY ISLAND	24/05	30/05	3950	3	2	0.50	1.19

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	END	LENGTH YDS.	WIDTH YDS.	INTEN-SITY	EST. BARE AREA	STD.SQ. YDS (1000"S)

AREA: 6,BUTEDALE CONTINUED

HAWKESBURY ISLAND	24/05	30/05	3600	3	4	0.05	6.67
HAWKESBURY ISLAND	27/05	02/06	9000	3	1	0.60	0.54
HAWKESBURY ISLAND	27/05	02/06	220	8	3	0.20	0.56
HIGGINS PASSAGE	25/04	28/04	200	80	5	0.20	12.80
KITASU BAY	06/04	09/04	1000	4	1	0.40	0.12
KITASU BAY	06/04	09/04	400	4	1	0.40	0.05
KITASU BAY	04/04	07/04	1350	5	1	0.60	0.14
KITASU BAY	04/04	07/04	150	5	1	0.40	0.02
KITASU BAY	04/04	07/04	1200	5	1	0.40	0.18
KITASU BAY	04/04	07/04	2250	8	2	0.60	1.44
KITASU BAY	04/04	07/04	100	5	2	0.70	0.03
KITASU BAY	04/04	07/04	600	8	3	0.60	0.77
KITASU BAY	04/04	07/04	50	8	3	0.75	0.04
KITASU BAY	04/04	07/04	150	5	2	0.50	0.08
KITASU BAY	04/04	08/04	225	5	3	0.50	0.23
KITASU BAY	04/04	07/04	100	4	1	0.60	0.01
LAREDO SOUND	05/04	07/04	600	8	2	0.60	0.38
LAREDO SOUND	05/04	07/04	300	10	3	0.70	0.36
LAREDO SOUND	05/04	07/04	750	5	2	0.50	0.38
LAREDO SOUND	05/04	07/04	650	10	3	0.60	1.04
LAREDO SOUND	05/04	07/04	1300	15	5	0.70	5.85
MARVIN ISLANDS	06/04	09/04	350	10	2	0.70	0.21
MARVIN ISLANDS	06/04	09/04	400	10	2	0.50	0.40
MARVIN ISLANDS	06/04	09/04	125	5	2	0.50	0.07
PARSONS ANCHORAGE	04/04	07/04	250	12	1	0.60	0.06
PARSONS ANCHORAGE	04/04	07/04	1000	5	1	0.60	0.10
PARSONS ANCHORAGE	04/04	07/04	200	8	3	0.60	0.26
PARSONS ANCHORAGE	04/04	07/04	400	10	3	0.60	0.64
PARSONS ANCHORAGE	04/04	07/04	200	5	2	0.50	0.10
PARSONS ANCHORAGE	04/04	07/04	200	4	1	0.20	0.03
PARSONS ANCHORAGE	04/04	07/04	75	5	4	0.50	0.12
PARSONS ANCHORAGE	04/04	07/04	250	30	2	0.70	0.45
PARSONS ANCHORAGE	04/04	07/04	200	20	1	0.75	0.05
SURF INLET	04/05	07/05	500	5	4	0.25	1.22
WEETEEAM BAY	04/04	08/04	610	12	4	0.10	4.23
WEETEEAM BAY	04/04	08/04	100	20	4	0.20	1.04
WEETEEAM BAY	04/04	08/04	175	5	4	0.20	0.46
WEETEEAM BAY	04/04	08/04	90	7	3	0.10	0.23
WEETEEAM BAY	04/04	08/04	150	50	4	0.20	3.90
WEETEEAM BAY	04/04	08/04	230	5	4	0.10	0.68
WEETEEAM BAY	04/04	08/04	180	5	3	0.20	0.29
WEETEEAM BAY	04/04	08/04	280	5	3	0.25	0.42
WEETEEAM BAY	04/04	08/04	250	3	3	0.25	0.23
WILBY POINT	04/04	07/04	1000	5	1	0.60	0.10

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	DATE SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTENSITY	EST. BARE AREA	STD.SQ. YDS (1000"S)
AREA: 6,BUTEDALE		CONTINUED					
WILBY POINT	05/04	07/04	300	12	3	0.70	0.43
WILBY POINT	05/04	07/04	600	12	3	0.70	0.86
AREA TOTAL			42060				49.97
AREA: 7,BELLA BELLA							
ATHLONE ISLAND	24/03	24/03	200	8	5	0.00	1.60
ATHLONE ISLAND	24/03	24/03	300	4	3	0.05	0.46
BERRY INLET	08/04	08/04	440	11	3	0.10	1.75
BERRY INLET	02/04	02/04	440	11	3	0.10	1.75
CAPE MARK	26/03	26/03	300	20	3	0.05	2.28
CAPE MARK	26/03	26/03	300	6	3	0.10	0.65
CAPE MARK	26/03	26/03	100	6	3	0.10	0.22
CAPE MARK	26/03	26/03	500	100	3	0.10	18.00
EDNA ISLANDS	08/04	08/04	200	10	6	0.15	2.38
EDNA ISLANDS	08/04	08/04	40	10	3	0.50	0.08
EDNA ISLANDS	08/04	08/04	160	15	7	0.15	3.88
EDNA ISLANDS	08/04	08/04	190	70	7	0.00	13.30
EDNA ISLANDS	08/04	08/04	1480	6	1	0.20	0.35
HOUGHTON ISLANDS	15/03	16/03	100	50	2	0.15	0.85
LADY TRUTCH PASS	28/03	30/03	1030	60	4	0.00	40.17
LADY TRUTCH PASS	27/03	30/03	980	60	6	0.00	82.32
LADY TRUTCH PASS	28/03	30/03	460	100	5	0.00	46.00
MANLEY ISLAND	21/03	23/03	300	10	3	0.05	1.14
MCNAUGHTON GROUP	12/04	12/04	750	3	4	0.15	1.24
MCNAUGHTON GROUP	08/04	08/04	600	6	4	0.10	2.11
MCNAUGHTON GROUP	08/04	08/04	2400	3	3	0.30	2.02
MCNAUGHTON GROUP	08/04	08/04	600	4	3	0.20	0.77
OSMIDALE HARBOUR	04/04	04/04	160	25	3	0.05	1.52
POWELL ANCHORAGE	13/03	13/03	50	3	1	0.10	0.01
SPIDER ANCHORAGE	08/04	08/04	50	7	4	0.10	0.21
SPIDER ANCHORAGE	08/04	08/04	400	5	3	0.50	0.40
SPIDER ANCHORAGE	08/04	08/04	800	3	1	0.30	0.03
SPIDER ISLAND	08/04	08/04	150	5	1	0.25	0.03
SPIDER ISLAND	08/04	08/04	60	5	1	0.50	0.01

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	END	LENGTH YDS.	WIDTH YDS.	INTEN-SITY	EST. BARE AREA	STD.SQ. YDS (1000"S)
AREA: 7,BELLA BELLA	CONTINUED						
STRYKER BAY	07/04	09/04	100	20	5	0.10	1.80
STRYKER BAY	07/04	09/04	500	10	3	0.50	1.00
STRYKER BAY	29/03	30/03	100	50	9	0.25	2.44
STRYKER BAY	29/03	30/03	125	60	6	0.25	3.66
STRYKER BAY	29/03	29/03	150	5	1	0.00	0.04
STRYKER BAY	29/03	29/03	100	30	3	0.10	1.08
STRYKER BAY	29/03	30/03	400	100	3	0.20	12.80
STRYKER BAY	30/03	30/03	250	10	3	0.15	0.85
STRYKER BAY	27/03	28/03	250	3	1	0.00	0.04
STRYKER BAY	27/03	29/03	1000	2	3	0.00	0.80
STRYKER BAY	27/03	29/03	300	40	7	0.20	18.24
STRYKER BAY	29/03	30/03	150	20	1	0.30	0.11
STRYKER BAY	29/03	30/03	250	2	1	0.00	0.03
STRYKER BAY	26/03	26/03	100	20	5	0.25	1.50
STRYKER BAY	08/03	08/03	300	5	3	0.10	0.54
STRYKER BAY	27/03	29/03	30	10	3	0.10	0.11
STRYKER BAY	27/03	28/03	300	3	1	0.00	0.05
STRYKER BAY	27/03	28/03	50	10	7	0.05	0.90
STRYKER BAY	03/04	03/04	200	10	3	0.15	0.68
STRYKER BAY	06/04	06/04	200	100	3	0.40	4.80
STRYKER BAY	27/03	28/03	250	40	7	0.15	16.15
STRYKER BAY	27/03	28/03	400	4	3	0.00	0.64
STRYKER BAY	27/03	28/03	75	6	3	0.15	0.15
THOMPSON BAY (HEAD)	10/04	10/04	100	3	3	0.10	0.11
THOMPSON BAY (HEAD)	09/04	09/04	150	40	3	0.10	2.16
TRIQUET ISLAND	08/04	08/04	335	5	1	0.15	0.09
TRIQUET ISLAND	03/04	08/04	500	5	3	0.30	0.70
TRIQUET ISLAND	08/04	03/04	200	3	3	0.05	0.23
TRIQUET ISLAND	08/04	08/04	320	250	6	0.00	112.00
TRIQUET ISLAND	08/04	08/04	400	20	3	0.50	1.60
TRIQUET ISLAND	08/04	08/04	1200	3	1	0.25	0.14
WASKESIU (MAPLE LEAF) PASS	03/04	08/04	400	6	5	0.05	2.28
WASKESIU (MAPLE LEAF) PASS	13/03	13/03	200	3	3	0.05	0.23
	16/03	16/03	400	3	1	0.15	0.05
AREA TOTAL			23285				413.58

HERRING SPAWN SUMMARY TABLE FOR 1979

AREA: 8,BELLA COOLA

SPAWNING GROUND	DATE START	SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTEN-SITY	EST. BARE AREA	STD.SQ. YDS (1000"S)
FAIRMILE PASSAGE	23/03	25/03	400	5	1	0.50	0.05
FAIRMILE PASSAGE	23/03	25/03	400	10	4	0.10	2.34
FAIRMILE PASSAGE	23/03	25/03	150	40	1	0.50	0.15
FAIRMILE PASSAGE	23/03	25/03	350	15	2	0.50	0.53
FAIRMILE PASSAGE	23/03	25/03	100	15	3	0.30	0.42
GARDEN POINT(BURKECHANNEL)	12/05	13/05	1200	3	4	0.10	2.11
GARDEN POINT(BURKECHANNEL)	12/05	13/05	800	2	3	0.25	0.48
GARDEN POINT(BURKECHANNEL)	12/05	13/05	500	5	1	0.50	0.07
GARDEN POINT(BURKECHANNEL)	12/05	13/05	1200	3	3	0.10	1.30
GARDEN POINT(BURKECHANNEL)	12/05	13/05	800	2	3	0.25	0.48
GARDEN POINT(BURKECHANNEL)	12/05	13/05	400	2	2	0.05	0.15
GARDEN POINT(BURKECHANNEL)	12/05	13/05	300	2	5	0.00	0.60
GARDEN POINT(BURKECHANNEL)	12/05	13/05	1200	2	3	0.10	0.86
GARDEN POINT(BURKECHANNEL)	12/05	13/05	3000	2	3	0.30	1.68
GARDEN POINT(BURKECHANNEL)	12/05	13/05	800	2	2	0.10	0.29
GARDEN POINT(BURKECHANNEL)	12/05	13/05	400	5	4	0.10	1.17
GARDEN POINT(BURKECHANNEL)	12/05	13/05	400	2	2	0.05	0.15
GARDEN POINT(BURKECHANNEL)	12/05	13/05	300	2	4	0.00	0.39
GARDEN POINT(BURKECHANNEL)	12/05	13/05	1200	2	2	0.10	0.43
GARDEN POINT(BURKECHANNEL)	12/05	13/05	3000	2	2	0.20	0.96
GARDEN POINT(BURKECHANNEL)	12/05	13/05	800	2	3	0.10	0.58
GARDEN POINT(BURKECHANNEL)	12/05	13/05	400	5	4	0.10	1.17
GARDEN POINT(BURKECHANNEL)	12/05	13/05	500	5	1	0.50	0.07
HOLTI POINT	20/05	20/05	1000	4	3	0.25	1.20
HOLTI POINT	24/05	25/05	400	2	4	0.15	0.44
HOLTI POINT	13/05	15/05	1800	1	1	0.25	0.07
HOLTI POINT	20/05	20/05	1200	2	1	0.20	0.10
HOLTI POINT	24/05	25/05	3000	2	2	0.15	1.02
HOLTI POINT	20/05	20/05	1000	4	3	0.25	1.20
HOLTI POINT	24/05	25/05	400	2	4	0.15	0.44
HOLTI POINT	13/05	15/05	1800	1	1	0.25	0.07
HOLTI POINT	20/05	20/05	1200	2	1	0.20	0.10
HOLTI POINT	24/05	25/05	3000	2	3	0.15	2.04
ILLAHIE INLET	23/03	25/03	100	15	3	0.20	0.48
ILLAHIE INLET	23/03	25/03	2020	5	5	0.10	9.09
ILLAHIE INLET	23/03	25/03	700	2	1	0.50	0.04
ILLAHIE INLET	23/03	25/03	1500	5	1	0.25	0.29
ILLAHIE INLET	23/03	25/03	100	5	1	0.30	0.02
ILLAHIE INLET	23/03	25/03	990	2	4	0.50	0.64
ILLAHIE INLET	23/03	25/03	1700	3	1	0.10	0.23
ILLAHIE INLET	23/03	25/03	500	7	3	0.10	1.26
ILLAHIE INLET	23/03	25/03	400	5	1	0.50	0.05
KEITH ANCHORAGE	01/04	02/04	200	60	2	0.05	2.28
KEITH ANCHORAGE	01/04	02/04	400	50	1	0.20	0.80

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	DATE SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTENSITY	EST. BARE AREA	STD.SQ. YDS (1000"S)

AREA: 8,BELLA COOLA CONTINUED

KEITH ANCHORAGE	01/04	04/04	100	15	2	0.40	0.18
KEITH ANCHORAGE	01/04	02/04	75	20	1	0.30	0.06
KEITH ANCHORAGE	01/04	04/04	400	15	1	0.45	0.17
KEITH ANCHORAGE	03/04	04/04	50	10	2	0.50	0.05
KEITH ANCHORAGE	01/04	01/04	50	10	1	0.10	0.03
KWAKUME POINT	23/03	25/03	200	25	2	0.50	0.50
KWAKUME POINT	23/03	25/03	200	2	1	0.50	0.01
KWAKUME POINT	23/03	25/03	100	3	1	0.50	0.01
KWAKUME POINT	23/03	25/03	500	10	2	0.25	0.75
KWAKUME POINT	23/03	25/03	200	100	3	0.25	6.00
KWAKUME POINT	23/03	25/03	500	10	2	0.25	0.75
KWAKUME POINT	23/03	25/03	300	3	2	0.50	0.09
KWAKUME POINT	23/03	25/03	200	100	2	0.50	2.00
MAPALAKLENK PT (BURKE CH)	18/05	18/05	3000	3	5	0.10	8.10
MAPALAKLENK PT (BURKE CH)	18/05	18/05	3000	3	4	0.10	5.27
NORTH BENTINCK ARM	06/03	10/03	4000	5	2	0.00	4.00
NYGGARD POINT	04/06	06/06	700	4	3	0.20	0.90
NYGGARD POINT	04/06	06/06	700	3	1	0.25	0.08
NYGGARD POINT	04/06	06/06	800	3	4	0.20	1.25
NYGGARD POINT	04/06	06/06	700	3	1	0.25	0.08
NYGGARD POINT	04/06	06/06	800	3	4	0.20	1.25
NYGGARD POINT	04/06	06/06	700	4	3	0.20	0.90
SALVAGE IS.	23/03	25/03	700	7	3	0.10	1.76
AREA TOTAL			59975				72.48

AREA: 9,RIVERS INLET

ALLARD BAY	10/04	16/04	25	1	3	0.40	0.01
ALLARD BAY	10/04	16/04	75	3	7	0.35	0.28
ALLARD BAY	10/04	16/04	100	2	3	0.30	0.06
DRANEY INLET	10/04	16/04	10	5	3	0.10	0.02
DRANEY INLET	10/04	16/04	25	5	7	0.15	0.20
DRANEY INLET	10/04	16/04	25	5	7	0.15	0.20
DRANEY INLET	10/04	16/04	50	5	7	0.15	0.41
DRANEY INLET	10/04	16/04	500	1	7	0.60	0.38

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	END	LENGTH YDS.	WIDTH YDS.	INTENSITY	EST. BARE AREA	STD.SQ. YDS (1000"S)

AREA: 9,RIVERS INLET CONTINUED

DRANEY INLET	10/04	16/04	100	5	5	0.00	0.50
DRANEY INLET	10/04	16/04	50	5	7	0.10	0.43
DRANEY INLET	10/04	16/04	130	5	7	0.15	1.05
DRANEY INLET	10/04	16/04	20	1	3	0.20	0.01
GOOSE BAY	10/04	16/04	540	35	5	0.20	15.12
GOOSE BAY	10/04	16/04	540	35	3	0.50	3.78
KILBELLA BAY	10/04	16/04	1100	3	3	0.60	0.53
AREA TOTAL			3290				22.98

AREA:10,SMITH INLET

LEROY BAY	27/04	27/04	850	3	3	0.30	0.71
SMITH INLET (HEAD)	05/04	05/04	100	5	3	0.50	0.10
SMITH INLET (HEAD)	05/04	05/04	100	5	3	0.50	0.10
TAKUSH HARBOUR	05/04	05/04	700	3	3	0.40	0.50
TAKUSH HARBOUR	05/04	05/04	250	4	3	0.50	0.20
TAKUSH HARBOUR	05/04	05/04	300	2	3	0.15	0.20
TAKUSH HARBOUR	05/04	05/04	800	3	3	0.20	0.77
TAKUSH NARROWS	27/04	27/04	200	100	5	0.35	13.00
AREA TOTAL			3300				15.58

AREA:11,SEYMOUR-BELIZE

NUGENT SOUND	06/04	08/04	100	20	6	0.33	1.88
SEYMOUR INLET	30/03	05/04	1500	2	3	0.40	0.72
SEYMOUR INLET	18/04	19/04	3500	2	4	0.30	3.19

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	DATE SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTEN-SITY	EST. BARE AREA	STD.SQ. YDS (1000"S)

AREA:11,SEYMOUR-BELIZE CONTINUED

SEYMOUR INLET	30/03	05/04	1500	3	5	0.30	3.15
SEYMOUR INLET	29/04	01/05	2000	2	4	0.25	1.95
SHELTER BAY	12/04	12/04	75	25	4	0.40	0.73
AREA TOTAL			8675				11.62

AREA:12,ALERT BAY

FORT RUPERT (BEAVER HBR.)	07/04	10/04	400	3	3	0.30	0.34
KEOSH SHOALS	22/03	25/03	75	20	3	0.05	0.57
KEOSH SHOALS	22/03	25/03	75	25	5	0.05	1.79
KEOSH SHOALS	22/03	25/03	100	25	5	0.10	2.25
KEOSH SHOALS	22/03	25/03	70	18	4	0.00	0.82
KINGCOME INLET	03/04	03/04	3000	1	3	0.50	0.60
KNIGHT INLET	17/03	17/03	500	1	3	0.10	0.18
KNIGHT INLET	13/03	13/03	2000	1	1	0.50	0.05
KNIGHT INLET	12/03	12/03	2000	1	1	0.10	0.09
KNIGHT INLET	12/03	12/03	1000	4	1	0.50	0.10
KNIGHT INLET	12/03	12/03	1100	1	3	0.10	0.40
KNIGHT INLET	17/03	17/03	1100	3	3	0.50	0.66
KNIGHT INLET	12/03	12/03	800	1	3	0.10	0.29
KNIGHT INLET	13/03	13/03	2200	1	1	0.50	0.06
KNIGHT INLET	13/03	13/03	2000	1	3	0.10	0.72
KNIGHT INLET	13/03	13/03	6500	1	1	0.60	0.13
KNIGHT INLET	30/03	30/03	6000	1	3	0.40	1.92
MONDAY ANCHORAGE	10/03	10/03	200	1	1	0.70	0.00
WAKEMAN SOUND	05/04	05/04	5000	1	3	0.50	1.00
WAKEMAN SOUND	16/03	16/03	2600	3	3	0.30	2.18
WAKEMAN SOUND	16/03	16/03	1400	1	1	0.50	0.04
WAKEMAN SOUND	16/03	16/03	2000	2	3	0.50	0.80
WAKEMAN SOUND	16/03	16/03	800	3	5	0.25	1.80
WAKEMAN SOUND	20/03	20/03	2200	1	3	0.50	0.44

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	END	LENGTH YDS.	WIDTH YDS.	INTEN-SITY	EST. BARE AREA	STD.SQ. YDS (1000"S)

AREA:12,ALERT BAY

AREA TOTAL			45120				17.23

AREA:13,QUATHIASKI

BELLS BAY	13/04	13/04	300	300	5	0.10	81.00
BELLS BAY	07/04	07/04	75	5	3	0.50	0.08
BELLS BAY	11/04	11/04	300	10	3	0.15	1.02
BELLS BAY	13/04	13/04	1300	4	5	0.05	4.94
BUTE INLET	20/03	20/03	100	1	5	0.20	0.08
BUTE INLET	23/03	23/03	150	2	4	0.05	0.19
BUTE INLET	24/03	24/03	300	1	3	0.10	0.11
BUTE INLET	26/03	26/03	1000	2	3	0.05	0.76
BUTE INLET	16/03	16/03	1000	2	3	0.25	0.60
BUTE INLET	25/03	25/03	600	2	3	0.10	0.43
BUTE INLET	16/03	16/03	50	25	3	0.05	0.48
BUTE INLET	25/03	25/03	400	3	3	0.15	0.41
BUTE INLET	16/03	16/03	75	25	3	0.00	0.75
BUTE INLET	23/03	23/03	1800	15	3	0.10	9.72
BUTE INLET	23/03	23/03	700	10	5	0.10	6.30
BUTE INLET	24/03	24/03	500	2	5	0.10	0.90
BUTE INLET	20/03	20/03	1500	1	3	0.25	0.45
DREW HARBOUR	03/04	03/04	25	20	3	0.00	0.20
DREW HARBOUR	03/04	03/04	300	5	5	0.50	0.75
DREW HARBOUR	03/04	03/04	50	20	3	0.00	0.40
DREW HARBOUR	03/04	03/04	50	25	3	0.25	0.38
DREW HARBOUR	03/04	03/04	200	5	3	0.05	0.38
FRANCISCO POINT	14/03	15/03	1760	20	5	0.25	26.40
HERIOT BAY	25/03	25/03	700	2	4	0.00	0.91
HERIOT BAY	25/03	25/03	100	2	3	0.00	0.08
HERIOT BAY	25/03	25/03	40	25	3	0.05	0.38
HERIOT BAY	25/03	25/03	100	10	4	0.10	0.59
HYACINTHE BAY	10/04	10/04	200	100	1	0.25	0.75
KANISH BAY	07/04	07/04	600	3	4	0.00	1.17
KANISH BAY	14/04	14/04	40	20	3	0.00	0.32
KANISH BAY	13/04	13/04	50	20	3	0.10	0.36
MCBRIDE BAY	25/03	26/03	2000	5	5	0.15	8.50

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	DATE SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTENSITY	EST. BARE AREA	STD.SQ. YDS (1000"S)

AREA:13,QUATHIASKI

AREA TOTAL			16365				149.79

AREA:14,COMOX

BIG QUALICUM RIVER	11/03	11/03	2400	10	4	0.05	14.82
BOWSER	11/03	11/03	1500	20	5	0.10	27.00
BOWSER	11/03	11/03	2500	60	5	0.40	90.00
CAPE LAZO	10/03	11/03	1000	700	7	0.50	665.00
COMOX HARBOUR	10/03	11/03	3500	800	7	0.50	2660.00
DEEP BAY	11/03	11/03	1000	600	6	0.40	504.00
DEEP BAY	11/03	11/03	2000	700	6	0.40	1176.00
DENMAN ISLAND	08/03	09/03	100	150	6	0.00	21.00
FRENCH CREEK	09/03	09/03	3600	15	5	0.10	48.60
FRENCH CREEK	11/03	11/03	1200	10	4	0.10	7.02
KOMAS BLUFF	01/03	11/03	1000	600	6	0.60	336.00
KOMAS BLUFF	01/03	11/03	1500	700	7	0.75	498.75
KOMAS BLUFF	01/03	11/03	4500	550	7	0.25	3526.88
LAMBERT CHANNEL	08/03	11/03	4500	200	7	0.50	855.00
NORTHWEST BAY	31/03	31/03	250	15	5	0.20	3.00
NORTHWEST BAY	31/03	31/03	300	25	5	0.20	6.00
NORTHWEST BAY	31/03	31/03	100	50	5	0.25	3.75
PARKSVILLE	09/03	09/03	2600	20	4	0.95	1.69
QUALICUM BEACH	11/03	11/03	3000	80	5	0.40	144.00
QUALICUM BEACH	11/03	11/03	300	100	5	0.00	30.00
QUALICUM BEACH	11/03	11/03	800	60	4	0.05	09.64
SEAL ISLETS	09/03	11/03	3700	600	7	0.40	2530.00
THAMES CREEK	10/03	11/03	3700	350	7	0.10	2214.45
AREA TOTAL			45050				15393.40 [1]

[1] See footnote 2 on page 14.

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	DATE SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTENSITY	EST. BARE AREA	STD.SQ. YDS (1000"S)
AREA:15,WESTVIEW							
ATREVIDA REEF	04/03	04/03	2000	100	6	0.00	280.00
ATREVIDA REEF	04/03	04/03	1000	400	5	0.00	400.00
ATREVIDA REEF	04/03	04/03	850	700	6	0.00	833.00
HARWOOD ISLAND	11/03	11/03	3000	3	4	0.00	5.85
LUND	12/04	12/04	100	2	3	0.00	0.08
SAVARY ISLAND	11/03	11/03	2000	200	4	0.00	260.00
SCUTTLE BAY	04/03	04/03	1000	200	7	0.00	380.00
SCUTTLE BAY	04/03	04/03	1800	800	4	0.00	936.00
SCUTTLE BAY	04/03	04/03	1500	600	6	0.00	1260.00
AREA TOTAL			13250				4354.93
AREA:16,PENDER HARBOUR							
GRIEF POINT	19/03	19/03	8000	2	3	0.00	6.40
WESTVIEW	11/03	11/03	4000	4	4	0.00	10.40
WESTVIEW	12/03	12/03	2000	3	5	0.00	6.00
AREA TOTAL			14000				22.80
AREA:17,NANAIMO							
NANOOSE BAY HEAD							
NANOOSE BAY HEAD	29/03	29/03	600	50	3	0.10	10.80
NANOOSE BAY HEAD	11/03	13/03	1400	75	3	0.75	10.50
BLUNDEN POINT	11/03	13/03	850	75	5	0.50	31.88
BOAT HARBOUR	12/03	12/03	1700	125	3	0.75	21.25
BOAT HARBOUR	14/03	14/03	600	5	3	0.30	1.12
BOAT HARBOUR	11/03	11/03	1000	5	2	0.20	0.80

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE START	SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTEN-SITY	EST. BARE AREA	STD.SQ. YDS (1000"S)
AREA:17,NANAIMO		CONTINUED					
BOAT HARBOUR	13/03	13/03	700	5	3	0.25	1.05
CLAM BAY	14/03	14/03	1500	10	3	0.20	4.80
CLAM BAY	15/03	15/03	300	5	3	0.30	0.42
CLAM BAY	14/03	14/03	1000	5	3	0.25	1.50
COFFIN POINT (IS.)	13/03	13/03	2000	5	3	0.35	2.60
COFFIN POINT (IS.)	14/03	14/03	2000	5	3	0.30	2.80
COFFIN POINT (IS.)	13/03	13/03	1000	10	4	0.30	4.55
COFFIN POINT (IS.)	12/03	12/03	500	10	3	0.30	1.40
EVENING COVE	11/03	11/03	1000	5	2	0.25	0.75
EVENING COVE	12/03	12/03	500	5	2	0.30	0.35
EVENING COVE	14/03	14/03	1000	20	3	0.30	5.60
EVENING COVE	15/03	15/03	1000	20	2	0.35	2.60
FALSE NARROWS	13/03	13/03	800	5	3	0.30	1.12
KULLEET BAY	28/03	28/03	1300	8	4	0.20	5.41
KULLEET BAY	28/03	28/03	1000	5	4	0.15	2.76
KULLEET BAY	28/03	29/03	500	30	3	0.15	5.10
KULLEET BAY	28/03	30/03	1000	100	3	0.30	28.00
KUPER ISLAND	10/03	10/03	1000	10	3	0.20	3.20
KUPER ISLAND	14/03	14/03	2500	10	3	0.20	8.00
KUPER ISLAND	16/03	16/03	1500	10	3	0.30	4.20
KUPER ISLAND	10/03	10/03	3500	5	2	0.15	2.98
LADYSMITH HARBOUR	10/03	10/03	1500	5	3	0.20	2.40
LADYSMITH HARBOUR	07/03	07/03	1000	5	2	0.15	0.85
LADYSMITH HARBOUR	09/03	09/03	1000	5	2	0.20	0.80
LADYSMITH HARBOUR	07/03	07/03	100	5	2	0.20	0.08
LEECH IS	18/03	18/03	1500	10	3	0.25	4.50
LEECH IS	15/03	15/03	1500	5	3	0.20	2.40
LEECH IS	17/03	17/03	2000	5	3	0.15	3.40
NANOOSE BAY ENTRANCE	11/03	13/03	1500	40	5	0.50	30.00
NANOOSE BAY ENTRANCE	11/03	13/03	225	40	5	0.60	3.60
NANOOSE BAY ENTRANCE	11/03	13/03	175	40	3	0.50	1.40
NORTH COVE	19/03	19/03	1000	5	5	0.15	4.25
NORTH COVE	19/03	19/03	2500	3	2	0.20	1.20
NORTH COVE	25/03	25/03	500	15	3	0.20	2.40
NORTH COVE	21/03	21/03	2000	15	3	0.15	10.20
NORTH COVE	20/03	20/03	2000	5	3	0.20	3.20
NORTH COVE	22/03	22/03	2000	5	2	0.25	1.50
NORTH COVE	18/03	18/03	2500	5	3	0.25	3.75
PYLADES CHANNEL	10/03	10/03	700	5	2	0.35	0.46
SUNRISE BEACH	12/03	13/03	450	75	3	0.30	9.45
SUNRISE BEACH	12/03	13/03	1200	100	3	0.40	28.80
SUNRISE BEACH	12/03	13/03	1550	160	5	0.30	173.60
THETIS ISLAND	17/03	17/03	1000	5	3	0.25	1.50
THETIS ISLAND	18/03	18/03	2500	3	2	0.30	1.05

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE START	SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTEN-SITY	EST. BARE AREA	STD.SQ. YDS (1000"S)
AREA:17,NANAIMO		CONTINUED					
THETIS ISLAND	20/03	21/03	3500	10	3	0.25	10.50
THETIS ISLAND	22/03	22/03	3500	10	3	0.20	11.20
THETIS ISLAND	23/03	23/03	3500	10	2	0.15	5.95
THETIS ISLAND	21/03	21/03	500	300	3	0.15	51.00
THETIS ISLAND	22/03	22/03	500	300	3	0.15	51.00
THETIS ISLAND	23/03	23/03	500	300	2	0.15	25.50
THETIS ISLAND	13/03	13/03	1000	5	3	0.15	1.70
THETIS ISLAND	17/03	17/03	1000	5	3	0.20	1.60
AREA TOTAL			76350				614.78
AREA:18,COWICHAN							
ANNETTE INLET	14/03	14/03	150	65	3	0.50	1.95
ANNETTE INLET	14/03	14/03	110	50	3	0.60	0.88
ANNETTE INLET	20/03	21/03	70	15	5	0.50	0.53
ANNETTE INLET	05/03	05/03	75	20	1	0.50	0.04
ANNETTE INLET	07/03	07/03	60	30	1	0.30	0.06
ANNETTE INLET	24/03	25/03	125	20	3	0.50	0.50
BOOT COVE	28/03	28/03	50	20	1	0.60	0.02
BOOT COVE	22/03	22/03	60	20	3	0.50	0.24
BOOT COVE	24/03	24/03	70	25	1	0.50	0.05
BOOT COVE	27/02	27/02	100	25	1	0.70	0.04
GANGES HARBOUR	19/03	19/03	100	30	1	0.80	0.03
GANGES HARBOUR	08/03	08/03	125	30	1	0.50	0.10
GANGES HARBOUR	06/03	07/03	200	50	3	0.80	0.80
GANGES HARBOUR	07/03	07/03	150	75	3	0.60	1.80
GANGES HARBOUR	06/03	06/03	150	50	1	0.75	0.10
GANGES HARBOUR	03/03	04/03	200	100	3	0.80	1.60
GANGES HARBOUR	01/03	02/03	300	200	3	0.80	4.80
GANGES HARBOUR	01/03	02/03	125	65	3	0.80	0.65
GANGES HARBOUR	01/03	01/03	250	125	3	0.80	2.50
GANGES HARBOUR	03/03	04/03	350	100	3	0.75	3.50
GANGES HARBOUR	07/03	07/03	500	125	3	0.75	6.25
GANGES HARBOUR	08/03	09/03	225	60	5	0.75	3.38
GANGES HARBOUR	08/03	09/03	200	40	3	0.80	0.64

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	DATE SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTENSITY	EST. BARE AREA	STD.SQ. YDS (1000"S)

AREA:18,COWICHAN CONTINUED

GANGES HARBOUR	06/03	07/03	300	75	3	0.80	1.80
GANGES HARBOUR	15/03	15/03	110	50	3	0.50	1.10
GLENTHORNE PASSAGE	28/03	28/03	100	10	3	0.70	0.12
LONG HARBOUR	14/03	15/03	600	40	5	0.80	4.80
LONG HARBOUR	15/03	15/03	150	15	3	0.75	0.23
LONG HARBOUR	10/03	11/03	200	40	3	0.60	1.28
LONG HARBOUR	10/03	11/03	125	50	3	0.70	0.75
LONG HARBOUR	01/04	03/04	300	35	7	0.20	15.96
LONG HARBOUR	12/03	12/03	600	125	4	0.70	14.63
LONG HARBOUR	14/03	14/03	250	150	1	0.75	0.47
LYALL HARBOUR	06/03	06/03	50	25	1	0.80	0.01
SELBY COVE	24/03	25/03	110	30	3	0.60	0.53
SELBY COVE	28/03	28/03	80	10	3	0.60	0.13
SELBY COVE	20/03	20/03	40	5	1	0.70	0.00
SELBY COVE	22/03	22/03	75	30	3	0.50	0.45
SELBY COVE	20/03	20/03	50	15	3	0.75	0.03
WINTER COVE	09/03	09/03	200	50	3	0.70	1.20
WINTER COVE	08/03	08/03	80	50	3	0.70	0.43
AREA TOTAL			7165				74.48

AREA:23,BARKLEY SOUND

BAMFIELD INLET	10/03	12/03	360	10	1	0.80	0.04
BAMFIELD INLET	10/03	12/03	275	75	3	0.60	3.30
BAMFIELD INLET	10/03	12/03	325	10	3	0.60	0.52
BAMFIELD INLET	10/03	12/03	175	10	1	0.60	0.04
BAMFIELD INLET	10/03	12/03	300	10	5	0.50	1.50
BAMFIELD INLET	10/03	12/03	475	8	1	0.50	0.10
BAMFIELD INLET	10/03	12/03	400	10	1	0.50	0.10
BAMFIELD INLET	10/03	12/03	475	10	1	0.50	0.12
BAMFIELD INLET	10/03	12/03	190	10	3	0.60	0.30
BAMFIELD INLET	10/03	12/03	400	10	3	0.60	0.64
BAMFIELD INLET	10/03	12/03	450	10	1	0.80	0.05
BAMFIELD INLET	10/03	12/03	375	10	1	0.80	0.04
BAMFIELD INLET	10/03	12/03	190	10	1	0.50	0.05

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	DATE SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTENSITY	EST. BARE AREA	STD.SQ. YDS (1000"S)

AREA:23,BARKLEY SOUND CONTINUED

DAVID ISLAND	10/03	12/03	200	35	6	0.50	4.90
DAVID ISLAND	10/03	12/03	125	50	5	0.85	0.94
DAVID ISLAND	10/03	12/03	175	25	7	0.00	8.31
DAVID ISLAND	10/03	12/03	150	25	5	0.85	0.56
DAVID ISLAND	10/03	12/03	200	50	5	0.20	8.00
FORBES ISLAND	10/03	12/03	525	50	5	0.15	22.31
FORBES ISLAND	10/03	12/03	425	50	7	0.25	30.29
LARKIN ISLAND	10/03	12/03	75	8	5	0.10	0.54
LARKIN ISLAND	10/03	12/03	250	7	5	0.00	1.75
LARKIN ISLAND	10/03	12/03	275	50	7	0.15	22.21
LARKIN ISLAND	10/03	12/03	425	8	7	0.00	6.46
LARKIN ISLAND	10/03	12/03	55	5	7	0.70	0.16
LARKIN ISLAND	10/03	12/03	30	7	7	0.40	0.24
LARKIN ISLAND	10/03	12/03	25	3	5	0.20	0.06
MACOAH PASSAGE	10/03	12/03	275	250	3	0.80	5.50
MACOAH PASSAGE	10/03	12/03	600	250	4	0.60	19.50
MACOAH PASSAGE	10/03	12/03	850	200	7	0.25	242.25
MACOAH PASSAGE	10/03	12/03	1450	125	5	0.75	45.31
MACOAH PASSAGE	10/03	12/03	1550	50	5	0.25	58.13
MACOAH PASSAGE	10/03	12/03	650	150	3	0.30	27.30
MACOAH PASSAGE	10/03	12/03	1000	25	5	0.25	18.75
MACOAH PASSAGE	10/03	12/03	675	75	7	0.45	52.90
MACOAH PASSAGE	10/03	12/03	500	125	1	0.70	0.94
MACOAH PASSAGE	10/03	12/03	300	75	5	0.00	22.50
MACOAH PASSAGE	10/03	12/03	625	75	5	0.50	23.44
MACOAH PASSAGE	10/03	12/03	850	50	3	0.50	8.50
MACOAH PASSAGE	10/03	12/03	600	100	4	0.50	19.50
MACOAH PASSAGE	10/03	12/03	225	50	3	0.50	2.25
MACOAH PASSAGE	10/03	12/03	800	100	3	0.50	16.00
MACOAH PASSAGE	10/03	12/03	1600	300	3	0.15	163.20
MAYNE BAY	09/04	10/04	500	50	3	0.50	5.00
MAYNE BAY	09/04	10/04	750	50	5	0.50	18.75
MAYNE BAY	09/04	10/04	750	50	3	0.50	7.50
MAYNE BAY	09/04	10/04	250	25	1	0.50	0.16
OTTAWAY ISLET	10/03	12/03	175	5	6	0.50	0.62
OTTAWAY ISLET	10/03	12/03	150	15	7	0.20	3.42
ROWLANDS ISLET	10/03	12/03	75	10	5	0.30	0.53
ROWLANDS ISLET	10/03	12/03	175	8	5	0.20	1.12
ROWLANDS ISLET	10/03	12/03	50	5	1	0.20	0.01
SPILLING ISLET	10/03	12/03	225	8	6	0.20	2.02
SPILLING ISLET	10/03	12/03	200	15	7	0.05	5.42
SPILLING ISLET	10/03	12/03	100	6	5	0.20	0.48
SPILLING ISLET	10/03	12/03	175	5	5	0.50	0.44
SPILLING ISLET	10/03	12/03	150	12	5	0.30	1.26

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	END	LENGTH YDS.	WIDTH YDS.	INTENSITY	EST. BARE AREA	STD.SQ. YDS (1000"S)
AREA:23,BARKLEY SOUND		CONTINUED					
SPRING COVE	10/03	12/03	150	5	5	0.40	0.45
SPRING COVE	10/03	12/03	100	10	3	0.90	0.04
SPRING COVE	10/03	12/03	150	10	6	0.50	1.05
SPRING COVE	10/03	12/03	30	3	3	0.80	0.01
SPRING COVE	10/03	12/03	250	5	1	0.90	0.01
SPRING COVE	10/03	12/03	25	3	3	0.85	0.00
SPRING COVE	10/03	12/03	75	5	1	0.90	0.00
ST INES ISLAND	10/03	12/03	1500	25	7	0.25	53.44
ST INES ISLAND	10/03	12/03	350	25	5	0.25	6.56
ST INES ISLAND	10/03	12/03	1200	25	7	0.50	28.50
ST INES ISLAND	10/03	12/03	350	5	5	0.50	0.88
STOPPER ISLANDS	10/03	12/03	375	15	5	0.10	5.07
STOPPER ISLANDS	10/03	12/03	950	3	5	0.70	0.86
STOPPER ISLANDS	10/03	12/03	250	10	5	0.75	0.63
STOPPER ISLANDS	10/03	12/03	500	2	5	0.10	0.90
STOPPER ISLANDS	10/03	12/03	250	10	4	0.40	0.98
STOPPER ISLANDS	10/03	12/03	300	8	5	0.10	2.16
STOPPER ISLANDS	10/03	12/03	350	3	4	0.60	0.27
STOPPER ISLANDS	10/03	12/03	100	7	4	0.30	0.32
STOPPER ISLANDS	10/03	12/03	100	2	3	0.60	0.03
STOPPER ISLANDS	10/03	12/03	50	3	5	0.05	0.14
STOPPER ISLANDS	10/03	12/03	300	33	5	0.50	4.95
STOPPER ISLANDS	10/03	12/03	425	5	5	0.00	2.13
AREA TOTAL			31730				995.61
AREA:24,CLAYOQUOT SOUND							
BECK ISLAND	12/03	12/03	175	50	3	0.15	2.98
CATFACE	21/03	21/03	40	30	7	0.00	2.28
CATFACE	21/03	21/03	150	5	7	0.00	1.43
ELECH BANK	09/03	09/03	1200	800	3	0.40	230.40
ELECH BANK	09/03	09/03	150	30	3	0.05	1.71
ELECH BANK	09/03	09/03	125	30	3	0.10	1.35
ELECH BANK	09/03	09/03	300	30	3	0.20	2.88
ELECH BANK	09/03	09/03	40	10	3	0.10	0.14

HERRING SPAWN SUMMARY TABLE FOR 1979

AREA:24,CLAYOQUOT SOUND CONTINUED

SPAWNING GROUND	DATE SPAWNED START	DATE SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTENSITY	EST. BARE AREA	STD.SQ. YDS (1000"S)
ELBOW BANK	09/03	09/03	40	10	7	0.00	0.76
ELBOW BANK	09/03	09/03	400	10	3	0.00	1.60
ELBOW BANK	09/03	09/03	200	100	7	0.00	38.00
ELBOW BANK	09/03	09/03	40	10	7	0.00	0.76
ELBOW BANK	09/03	09/03	15	15	7	0.00	0.43
ELBOW BANK	09/03	09/03	70	5	5	0.00	0.35
FELICE ISLAND	12/03	12/03	300	100	3	0.20	9.60
HECATE BAY	09/03	09/03	100	25	3	0.00	1.00
HECATE BAY	09/03	09/03	35	15	3	0.00	0.21
HECATE BAY	09/03	09/03	25	6	5	0.00	0.15
HECATE BAY	09/03	09/03	200	100	5	0.00	20.00
HECATE BAY	09/03	09/03	400	200	5	0.00	80.00
HECATE BAY	09/03	09/03	100	30	7	0.00	5.70
HECATE BAY	09/03	09/03	200	50	3	0.00	4.00
HECATE BAY	09/03	09/03	100	75	7	0.00	14.25
HESQUIAT HARBOUR	06/03	06/03	350	75	3	0.10	9.45
HOT SPRINGS (REFUGE) COVE	10/03	10/03	80	8	3	0.10	0.23
HOT SPRINGS (REFUGE) COVE	10/03	10/03	15	5	3	0.00	0.03
HOT SPRINGS (REFUGE) COVE	10/03	10/03	200	7	5	0.10	1.26
HOT SPRINGS (REFUGE) COVE	10/03	10/03	25	7	3	0.00	0.07
HOT SPRINGS (REFUGE) COVE	10/03	10/03	15	4	3	0.00	0.02
HOT SPRINGS (REFUGE) COVE	10/03	10/03	20	5	3	0.00	0.04
HOT SPRINGS (REFUGE) COVE	06/03	06/03	500	100	3	0.00	20.00
HOT SPRINGS (REFUGE) COVE	06/03	06/03	300	80	3	0.20	7.68
HOT SPRINGS (REFUGE) COVE	06/03	06/03	300	75	3	0.15	7.65
HOT SPRINGS (REFUGE) COVE	06/03	06/03	250	30	3	0.25	2.25
MAURUS CHANNEL	10/03	10/03	200	30	7	0.10	10.26
MAURUS CHANNEL	10/03	10/03	20	8	9	0.00	0.48
MAURUS CHANNEL	10/03	10/03	500	10	5	0.00	5.00
MAURUS CHANNEL	10/03	10/03	100	10	5	0.05	0.95
MAURUS CHANNEL	10/03	10/03	200	5	5	0.05	0.95
MAURUS CHANNEL	10/03	10/03	100	15	5	0.00	1.50
MAURUS CHANNEL	10/03	10/03	50	10	5	0.15	0.43
MAURUS CHANNEL	10/03	10/03	20	5	7	0.05	0.18
MAURUS CHANNEL	10/03	10/03	16	2	5	0.00	0.03
MAURUS CHANNEL	10/03	10/03	300	20	5	0.30	4.20
MAURUS CHANNEL	10/03	10/03	80	3	5	0.00	0.24
MAURUS CHANNEL	10/03	10/03	200	30	9	0.00	18.00
MEARES ISLAND	12/03	12/03	80	20	5	0.05	1.52
MEARES ISLAND	12/03	12/03	125	15	5	0.05	1.79
MEARES ISLAND	12/03	12/03	225	150	5	0.20	27.00
MEARES ISLAND	12/03	12/03	540	100	3	0.15	18.36
MEARES ISLAND	12/03	12/03	525	100	7	0.10	89.78
MEARES ISLAND	12/03	12/03	150	20	7	0.05	5.42

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	DATE SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTENSITY	EST. BARE AREA	STD.SQ. YDS (1000"S)

AREA:24,CLAYOQUOT SOUND CONTINUED

MEARES ISLAND	12/03	12/03	150	5	5	0.00	0.75
MEARES ISLAND	12/03	12/03	150	15	5	0.00	2.25
STUBBS ISLAND	09/03	09/03	250	70	5	0.10	15.75
STUBBS ISLAND	09/03	09/03	500	250	3	0.20	40.00
STUBBS ISLAND	09/03	09/03	150	60	7	0.50	8.55
STUBBS ISLAND	09/03	09/03	250	100	3	0.10	9.00
STUBBS ISLAND	09/03	09/03	200	70	7	0.20	21.28
STUBBS ISLAND	09/03	09/03	400	150	7	0.05	108.30
STUBBS ISLAND	09/03	09/03	500	250	5	0.05	118.75
STUBBS ISLAND	09/03	09/03	30	12	7	0.05	0.65
STUBBS ISLAND	09/03	09/03	100	100	7	0.15	16.15
VARGAS ISLAND	12/03	12/03	400	100	7	0.15	64.60
VARGAS ISLAND	12/03	12/03	100	100	7	0.35	12.35
VARGAS ISLAND	12/03	12/03	125	50	5	0.10	5.63
VARGAS ISLAND	12/03	12/03	1000	150	5	0.05	142.50
VARGAS ISLAND	12/03	12/03	200	200	3	0.15	13.60
VARGAS ISLAND	12/03	12/03	200	40	3	0.20	2.56
VARGAS ISLAND	12/03	12/03	100	20	3	0.20	0.64
VARGAS ISLAND	12/03	12/03	200	150	7	0.10	51.30
VARGAS ISLAND	12/03	12/03	100	100	7	0.10	17.10
WICKANINNISH ISLAND	14/03	14/03	80	40	3	0.20	1.02
YELLOW BANK	12/03	12/03	60	20	5	0.00	1.20
YELLOW BANK	12/03	12/03	35	10	5	0.00	0.35
YELLOW BANK	12/03	12/03	100	10	5	0.05	0.95
YELLOW BANK	12/03	12/03	100	20	7	0.05	3.61
YELLOW BANK	12/03	12/03	50	15	3	0.10	0.27
YELLOW BANK	12/03	12/03	500	300	3	0.60	24.00
YELLOW BANK	12/03	12/03	200	10	5	0.20	1.60
YELLOW BANK	12/03	12/03	30	5	5	0.05	0.14
AREA TOTAL			16151				1339.60

AREA:25,NOOTKA SOUND

BAJO POINT	24/03	24/03	3000	700	4	0.00	1365.00
BAJO POINT	15/03	15/03	0	0	0	0.00	0.00

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	END	LENGTH YDS.	WIDTH YDS.	INTEN-SITY	EST. BARE AREA	STD.SQ. YDS (1000"S)

AREA:25,NOOTKA SOUND CONTINUED

BAJO POINT	12/03	12/03	0	0	0	0.00	0.00
BAJO POINT	24/03	24/03	3003	999	3	0.00	1200.00
GARDEN POINT	11/03	15/03	450	200	3	0.30	25.20
GARDEN POINT	11/03	15/03	400	150	5	0.30	42.00
GARDEN POINT	11/03	15/03	900	400	2	0.30	50.40
NUCHATLITZ VILLAGE	08/03	10/03	900	400	1	0.50	9.00
NUCHATLITZ VILLAGE	09/03	10/03	100	100	4	0.00	6.50
NUCHATLITZ VILLAGE	07/03	09/03	180	100	4	0.00	11.70
NUCHATLITZ VILLAGE	09/03	10/03	300	100	2	0.30	4.20
NUCHATLITZ VILLAGE	09/03	10/03	130	80	1	0.00	0.52
NUCHATLITZ VILLAGE	09/03	10/03	200	50	1	0.30	0.35
NUCHATLITZ VILLAGE	09/03	10/03	430	100	1	0.80	0.43
NUCHATLITZ VILLAGE	08/03	10/03	200	100	4	0.30	10.01
NUCHATLITZ VILLAGE	08/03	10/03	230	120	4	0.30	12.56
NUCHATLITZ VILLAGE	08/03	10/03	130	50	1	0.00	0.33
NUCHATLITZ VILLAGE	08/03	10/03	570	240	1	0.30	4.79
OUTER NUCHATLITZ	10/03	15/03	220	70	2	0.30	2.16
OUTER NUCHATLITZ	10/03	15/03	720	250	1	0.30	6.30
OUTER NUCHATLITZ	10/03	15/03	50	50	1	0.30	0.09
OUTER NUCHATLITZ	10/03	15/03	330	110	2	0.80	1.45
OUTER NUCHATLITZ	10/03	15/03	200	100	1	0.00	1.00
OUTER NUCHATLITZ	10/03	15/03	900	320	1	0.80	2.88
OUTER NUCHATLITZ	15/03	15/03	1200	70	2	0.30	11.76
OUTER NUCHATLITZ	15/03	15/03	150	100	1	0.30	0.53
OUTER NUCHATLITZ	15/03	15/03	200	180	2	0.30	5.04
OUTER NUCHATLITZ	15/03	15/03	450	200	4	0.30	40.95
OUTER NUCHATLITZ	10/03	15/03	350	60	2	0.30	2.94
OUTER NUCHATLITZ	10/03	15/03	240	110	6	0.30	25.87
PORT LANGFORD	10/03	15/03	140	60	3	0.30	2.35
PORT LANGFORD	10/03	15/03	1300	10	1	0.90	0.07
PORT LANGFORD	07/03	20/03	190	30	4	0.30	2.60
PORT LANGFORD	10/03	15/03	200	50	1	0.30	0.35
PORT LANGFORD	10/03	20/03	130	40	3	0.30	1.46
PORT LANGFORD	10/03	20/03	120	60	1	0.30	0.25
PORT LANGFORD	07/03	20/03	140	40	1	0.80	0.06
PORT LANGFORD	07/03	20/03	560	15	4	0.30	3.82
PORT LANGFORD	07/03	20/03	260	100	4	0.00	16.90
PORT LANGFORD	07/03	20/03	100	50	6	0.00	7.00
PORT LANGFORD	07/03	20/03	125	100	3	0.80	1.00
PORT LANGFORD	07/03	20/03	450	75	1	0.80	0.34
PORT LANGFORD	07/03	20/03	60	50	1	0.80	0.03
PORT LANGFORD	10/03	20/03	150	30	1	0.30	0.16
PORT LANGFORD	10/03	20/03	630	25	2	0.30	2.21
PORT LANGFORD	10/03	20/03	260	50	2	0.30	1.82

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE START	SPAWNED END	LENGTH YDS.	WIDTH YDS.	INTEN-SITY	EST. BARE AREA	STD.SQ. YDS (1000"S)
AREA:25,NOOTKA SOUND		CONTINUED					
ROSA HARBOUR	10/03	10/03	360	180	6	0.30	63.50
ROSA HARBOUR	10/03	10/03	190	160	2	0.30	4.26
ROSA HARBOUR	10/03	10/03	160	130	2	0.30	2.91
ROSA HARBOUR	10/03	10/03	150	50	3	0.30	2.10
ROSA HARBOUR	10/03	10/03	280	130	9	0.30	76.44
ROSA HARBOUR	10/03	10/03	180	100	1	0.30	0.63
ROSA HARBOUR	10/03	10/03	170	60	2	0.00	2.72
AREA TOTAL			22458				3036.94
AREA:26,KYUQUOT SOUND							
CLANNINICK COVE	10/03	10/03	0	0	0	0.00	0.00
NASPARTI INLET	09/03	09/03	0	0	0	0.00	0.00
OUOUKINSH INLET	10/03	10/03	0	0	0	0.00	0.00
AREA TOTAL			0				0.00
AREA:27,QUATSINO SOUND							
FORWARD INLET	08/03	10/03	1000	15	6	0.05	19.95
FORWARD INLET	08/03	10/03	650	200	4	0.30	59.15
FORWARD INLET	08/03	10/03	600	100	4	0.05	37.05
FORWARD INLET	08/03	10/03	750	50	4	0.20	19.50
FORWARD INLET	08/03	10/03	100	25	4	0.20	1.30
FORWARD INLET	08/03	10/03	300	75	3	0.10	8.10
FORWARD INLET	08/03	10/03	250	200	4	0.10	29.25
FORWARD INLET	08/03	10/03	450	125	6	0.75	19.69

HERRING SPAWN SUMMARY TABLE FOR 1979

SPAWNING GROUND	DATE SPAWNED START	END	LENGTH YDS.	WIDTH YDS.	INTEN-SITY	EST. BARE AREA	STD.SQ. YDS (1000"S)
AREA:27,QUATSINO SOUND	CONTINUED						
FORWARD INLET	09/03	10/03	250	25	3	0.20	2.00
FORWARD INLET	09/03	10/03	350	25	3	0.20	2.80
HAZARD POINT	10/03	13/03	650	100	4	0.20	33.80
HAZARD POINT	10/03	13/03	700	20	4	0.20	7.28
HAZARD POINT	10/03	13/03	300	25	4	0.15	4.15
HAZARD POINT	10/03	13/03	1000	30	5	0.25	22.50
HAZARD POINT	10/03	13/03	500	100	3	0.30	14.00
HAZARD POINT	10/03	13/03	500	50	4	0.15	13.81
KLASKISH INLET	09/03	09/03	750	125	4	0.15	51.60
LEESON HARBOUR	21/03	21/03	1500	30	6	0.10	56.70
MCDOUGAL ISLAND	09/03	09/03	400	20	4	0.15	4.42
MCDOUGAL ISLAND	08/03	09/03	2300	200	4	0.20	239.20
MCDOUGAL ISLAND	09/03	09/03	1500	100	4	0.20	78.00
MCDOUGAL ISLAND	09/03	09/03	150	50	4	0.15	4.15
NORTH HARBOUR	13/03	13/03	250	50	5	0.05	11.88
NORTH HARBOUR	10/03	11/03	800	75	4	0.20	31.20
NORTH HARBOUR	10/03	11/03	2600	100	4	0.25	136.50
NORTH HARBOUR	13/03	13/03	400	50	6	0.25	21.00
NORTH HARBOUR	10/03	11/03	1500	100	5	0.10	135.00
NORTH HARBOUR	13/03	13/03	300	25	4	0.10	4.39
AREA TOTAL			21000				1068.57
GRAND TOTAL			554681				30200.36